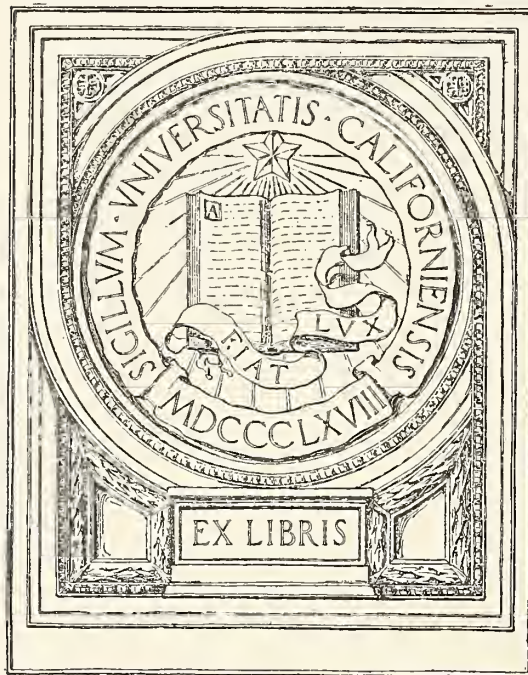



MEDICAL SCHOOL
LIBRARY



EX LIBRIS



Digitized by the Internet Archive
in 2016 with funding from
The National Endowment for the Humanities and the Arcadia Fund

The Journal of the Iowa State Medical Society

INDEX

Volume VIII, January to December

1918

EDITOR

D. S. AIRCHILD, M.D., Clinton

BUSINESS MANAGER

T. B. THROCKMORTON, M.D., Des Moines

TRUSTEES

J. W. COKENOWER, M.D., Des Moines
T. E. POWERS, M.D., Clarinda
W. B. SMALL, M.D., Waterloo

PUBLICATION COMMITTEE

D. S. FAIRCHILD, M.D., Clinton
W. L. BIERRING, M.D., Des Moines
C. P. HOWARD, M.D., Iowa City

INDEX

1918

	PAGE		PAGE
Abdominal Perforations, Acute, F. W. Cram, M.D., Sheldon..	279	Middleton, H. E., Ames.....	37
Abstract of a Speech of Hon. Robert L. Owen in U. S. Senate, July 20, 1917.....	95	Miller, Major Joseph L., Chicago.....	419
Acidosis in Children, Fred Moore, M.D., Des Moines.....	125	Moes, Dr. M. J., Dubuque.....	41
Acidosis and its Relation to Upper Respiratory Conditions, F. A. Stevens, M.D., Sioux City.....	136	Moore, Dr. Fred, Des Moines.....	125
Acidosis in Surgery, Evarts A. Graham, M.D., F.A.C.S., Mason City.....	130	Mosher, Dr. Eliza M., New York.....	22
Adenitis, Treatment of Tuberculous Cervical, George Decker, M.D., F.A.C.S., Davenport.....	209	Myers, Dr. L. L., Iowa City.....	246
Address of President, John Nelson Warren, M.D., F.A.C.S., Sioux City.....	197	McGready, Dr. J. H., Independence.....	332
American Medical Women, War Work of, Eliza M. Mosher, MD., New York.....	22	Naftzger, Dr. J. B., Sioux City.....	365
Anti-Tuberculosis Work, Organization of Effective, D. B. Armstrong, M.D., M.A., M.S., Framingham, Mass.....	73	Nuzum, Dr. John W., Chicago.....	237
Army News.....	277	Pearson, Dr. W. W., Des Moines.....	395
AUTHORS—		Reed, Dr. Paul, Iowa City.....	168
Albert, Dr. Henry, Iowa City.....	1	Rendleman, Dr. Wm. H., Davenport.....	10
Alcock, Dr. Nathaniel G., Iowa City.....	45	Rohner, Dr. F. J., Iowa City.....	426
Allen, Dr. William L., Davenport.....	315	Rowan, Dr. Charles J., Iowa City.....	49
Armstrong, Dr. D. B., Framingham, Mass.....	73	Rundlett, Dr. David L., Sioux Falls, S. D.....	200
Bierring, Dr. Walter L., Des Moines.....	4	Sanders, Dr. William E., Des Moines.....	422
Branson, Dr. Laura House, Iowa City.....	233	Schilling, Dr. Nicholas, New Hampton.....	207
Byfield, Dr. Albert H., Iowa City.....	385	Schooler, Dr. Lewis, Des Moines.....	235
Cram, Dr. F. W., Sheldon.....	279	Shore, Dr. F. E. V., Des Moines.....	86
Crawford, Dr. George E., Cedar Rapids.....	213	Sparks, Dr. F. R., Waverly.....	182
Crawford, Dr. Jennings, Cedar Rapids.....	355	Steelsmith, Dr. F. W., Tuscaloosa, Ala.....	392
Dean, Dr. L. W., Iowa City.....	89	Steindler, Dr. Arthur, Iowa City.....	53
Decker, Dr. George, Davenport.....	209	Stephenson, Dr. C. W., Milton.....	177
Duhigg, Major Thos. E., Des Moines.....	91	Stevens, Dr. F. A., Sioux City.....	136
Dunlap, J. H., Iowa City.....	121	Stoner, Dr. A. P., Des Moines.....	283
Ely, Dr. Frank A., Des Moines.....	388	Thielen, Dr. M. H., Grundy Center.....	317
Evans, Dr. Evan S., Grinnell.....	360	Vinson, Dr. H. W., Ottumwa.....	171
Fairchild, Dr. D. S., Clinton.....	320	Walker, Dr. John R., Fort Madison.....	334
Farnham, Dr. A. J., Traer.....	217	Walsh, Dr. T. N., Hawkeye.....	143
Fox, Dr. W. H., Waucoma.....	186	Warren, Dr. John Nelson, Sioux City.....	197
Fuller, Dr. Frank M., Keokuk.....	180	Werts, Dr. C. M., Des Moines.....	78
Graham, Dr. Evarts A., Mason City.....	130	Williams, Dr. Edward M., Sioux City.....	16
Green, Dr. R. E., Creston.....	43		
Hamilton, Dr. John H., Iowa City.....	436	Births—(adv. p. xvi, Jan., Feb., Mch. Nos.) 160, 277, 314, 416, 452	
Hands, Dr. S. G., Davenport.....	287	Blood-Pressure? What is the Significance of Diastolic, G. E. Crawford, Cedar Rapids.....	213
Hedblom, Dr. C. A., Rochester, Minn.....	328	Bone Lesions, Diagnosis of Chronic, Arthur Steindler, M.D., Iowa City.....	53
Higgins, Lafayette, Des Moines.....	163		
Hill, Dr. Gershom H., Des Moines.....	138	BOOK REVIEWS—	
Howard, Dr. C. P., Iowa City.....	351	Alcohol, Hygiene and Legislation.....	450
Jain, B. Singh, Iowa City.....	368	American Addresses on War Surgery.....	195
Kasten, Dr. Wm. C., Fort Madison.....	175	Anatomy, Manual of.....	34
Kersch, Dr. Paul, Rock Island, Ill.....	290	Anesthesia Including Analgesia, Local and Regional.....	383
Kime, Dr. J. W., Fort Dodge.....	431	Blood Transfusion, Hemorrhage and the Anemias.....	227
Langworthy, Dr. Henry G., Dubuque.....	83	Cardiology, Clinical.....	155
Lapsley, Dr. Robert M., Keokuk.....	20	Cavernous and Plexiform, Treatment of Angiomata by the Injection of Boiling Water.....	347
Levine, Max, Ames.....	37	Chemical Analysis, Laboratory Manual of Qualitative.....	350
		Chemical Pathology, Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved.....	349
		Chemistry with Experiment, an Intermediate Text-Book of Physiological.....	68
		Clinical Diagnosis.....	381

	PAGE
Clinical Diagnosis by Means of Laboratory Methods, Manual of.....	278
Clinical Medicine, Treatise on.....	350
Conservation of Vision.....	68
Cystoscopy and Urethroscopy, Treatise on.....	410
Diabetic Manual for the Use of Doctor and Patient.....	382
Dictionary, American Illustrated.....	228
Dietary Computer, A Practical.....	226
Differential Diagnosis.....	349
Diseases of the Chest and the Principles of Physical Diagnosis	67
Diseases of the Digestive Organs with Special Reference to Their Diagnosis and Treatment.....	154
Diseases of the Heart for the General Practitioner, A Clinical Treatise on.....	154
Diseases of the Male Urcthra.....	449
Diseases of the Skin, Their Pathology and Treatment.....	109
Diseases of Women.....	33
Emergencies of a General Practice.....	348
Food for the Sick.....	110
Headaches and Eye Disorders of Nasal Origin, Concerning Some.....	414
History of Medicine.....	32
Hodgen Wire Cradle Extension-Suspension Splint.....	449
Impotence and Sterility with Aberrations of the Sexual Function and Sex-Gland Implantation.....	110
Infant Feeding.....	227
Infant Feeding, Clinical Lectures on.....	228
Infection, Immunity and Specific Therapy, with Special Reference to Immunologic Technic, Practical Text-Book of.....	196
International Clinics.....	155, 411
Laboratory Diagnosis, Manual of.....	68
Materia Medica, Pharmacology, Therapeutics, and Prescription Writing for Students and Practitioners.....	228
Materia Medica and Therapeutics for Nurses, The Essentials of.....	450
Mayo Clinic, 1917 Collected Papers.....	410
Medical Clinics of North America.....	226, 383, 412
Medical Diseases, Clinical Manual of.....	226
Medical Service at the Front.....	278
Medical War Manual No. 2 Notes for Army Medical Officers.....	(adv. page xvi May No.)
Medical War Manual No. 3, Military Ophthalmic Surgery	196
Medical War Manual No. 5.....	278
Medical War Manual No. 6.....	278
Medical War Manual No. 7.....	450
Milk Problem in Sanitation, Economics and Agriculture, The Modern.....	68
Neurosyphilis, Modern Systematic Diagnosis and Treatment	67
Nutrition, Elements of the Science of.....	348
Obstetrics, Talks on.....	156
Obstetrics, A Text-Book of.....	413
Oral Sepsis in its Relation to Systemic Disease.....	382
Orthopedic Surgery, Military.....	226
Pediatrics, Practice of.....	350
Physical Diagnosis.....	155
Pocket Formulary, A.....	381
Poisonous Plants, Manual of.....	383
Post-Graduate Medicine, Prevention and Treatment of Disease	347
Practice of Medicine, A Text-Book on the.....	414
Progressive Medicine.....	34, 109, 413, 449
Public Health Reports.....	350
Reclaiming the Maimed.....	382
Rockefeller Foundation.....	67
Roentgenograms, Interpretation of Dental and Maxillary	347
Science of Nutrition, Elements of the.....	348
Spleen and Anemia, The.....	412

	PAGE
Splints and Appliances for the Medical Department of the U. S. Army, 1917, Manual of.....	228
Surgery and Diseases of the Mouth and Jaws.....	110
Surgery and Venereal Diseases, White and Martin's Genito-Urinary	33
Surgical Clinics of Chicago, The.....	34, 195, 548, 411, 412
Surgical Nursing, Principles of.....	349
Syphilis and Public Health.....	348, 381
Third Great Plague.....	225
Tuberculosis, American Review of.....	34
Tuberculosis and How to Win it, The Battle with.....	412
Tuberculous Herd, Managing a.....	68
Tumors of the Nervous Acusticus and the Syndrome of the Cerebello-Pontile Angle.....	225
University of Iowa Monographs, Studies in Medicine....	412
War Wounds, The Treatment of.....	410
Way out of War, The.....	381
Cardiac Disease, Some Remarks on the Present Status of, David L. Rundlett, M.D., Sioux Falls, S. D.....	200
Cerebrum with Resultant Conditions, Prenatal, Natal and Postnatal Lesions, Edward M. Williams, M.D., Sioux City 16	
Cesarean Section, Indications for, Nicholas Schilling, M.D., F.A.C.S., New Hampton.....	207
Changes of Location—(adv. page xvi, Feb., Mch.) 162, (adv. page xvi June No.).....	277 (adv. page xviii Dec. No.)
Communicable Diseases, Laboratory Diagnosis of Atypical Cases, Henry Albert, M.D., Iowa City.....	1
DEATH NOTICES—	
Anderson, Dr. Frederick E.....	(adv. page xvi Jan. No.)
Bailey, Dr. Benjamin F.....	314
Barr, Dr. Charles.....	407
Bay, Dr. Edgar L.....	448
Boynton, Dr. Henry W.....	(adv. page xvi Feb. No.)
Brott, Dr. John Frederick.....	448
Burge, Dr. Albertus Joseph.....	112
Butler, Dr. Frank Post.....	(adv. page xvi Feb. No.)
Caldwell, Dr. Edward J.....	161
Campbell, Dr. Claude Melville.....	449
Carpenter, Dr. Lewis J.....	161
Conn, Dr. James.....	161
Conner, Mrs. R. S.....	384
Craig, Dr. William David.....	112
Crcswell, Dr. William L.....	448
Dahl, Dr. Sigurd Peter.....	408
Davies, Dr. James C.....	161
Doty, Dr. Elmer A.....	161
Eastman, Dr. Charles Rochester.....	448
Forward, Dr. Charles Pulford.....	448
Gonterman, Dr. Emery Oliver.....	161
Hanawalt, Mrs. Emily A.....	(adv. page xvi Feb. No.)
Hanson, Dr. Edward Mathew.....	(adv. page xvi Jan. No.)
Hathaway, Dr. Lawrence Bryant.....	161
Hindman, Dr. David R.....	112
Homan, Dr. R. W.....	448
Hummer, Dr. Warren Lee.....	277
Irish, Mrs. Harry R.....	(adv. page xvi Feb. No.)
King, Dr. Azuba Doty.....	161
King, Dr. Elbridge H.....	112
Klein, Dr. Adam Raymond.....	(adv. page xvi June No.)
Large, Dr. Alden Frances.....	(adv. page xvi June No.)
Linehan, Dr. Mathias Daniel.....	408
Long, Orlando Voss.....	162
Marvin, Dr. H. N.....	448
Moon, Dr. Arnold Robert.....	408, 448
Noyes, Dr. James H.....	112
Payne, Dr. R. H.....	112
Post, Dr. Wm. Cranston.....	(adv. page xvi Feb. No.)

	PAGE		PAGE
Rean, Major William R.....	408	Columbia University Plans Pay Diagnostic Clinic.....	308
Rhoades, Dr. Ida Grant.....	276	Commercial Exhibitors, Our.....	158
Riggs, Dr. Lindus L.....	112	Cooperative Medical Advertising Bureau, Activities of....	61
Robinson, Dr. William E.....	112	Council of National Defense.....	407
Roewe, Dr. Henry Joscph.....	448	Council of National Defense, Medical Section.....	373
Rybolt, Lieut. Stephen Ballard.....	72	Damages for Failure to Remove Gauze and Portion of	
Scott, Dr. William M.....	112	Tube	63
Sheehan, Capt. Edward M.....	72	Division Surgeons, Memorandum to.....	193
Skinner, Dr. Frederick Cecil.....	232	Doctor in Stylish Garb.....	381
Smead, Dr. Carroll C.....	72	Donahue, Dr. Julia, Goes to Washington.....	440
Speaker, Dr. William T.....	232	Dues, Increase in.....	148
Steinle, Dr. Henry Ferdinand.....	408	Dues of War Members, Concerning the.....	69
Stone, Dr. General Jackson.....	408	Dues Question, The 1918.....	158
Surber, Dr. Levi H.....	72	Effects of Moving Pictures on the Eyes, Injurious.....	151
Tedrow, Dr. James B.....	162	English Appreciation of American M. R. C. Officers, An	306
Ward, Dr. Arista J.....	162	English Army, Medical Advisory Board.....	305
West, Dr. Alonzo T.....	162	Enrollment of Physicians.....	343
Whitley, Dr. Frank P.....	314	Examination of Selected Men for Military Service.....	101
Williams, Dr. John Calvin.....	314	Exemption and Advisory Boards, Honesty and Capacity	
Wilson, Dr.....	408	of Medical Men on.....	371
Winsell, Merrit.....	384	Expenses of Journal and Medico-Legal, New York State	
Wyatt, Dr. M. B.....	448	Medical Society.....	62
Yost, Dr. Francis M.....	408	Food Position in Germany.....	107
Yost, Dr. John M.....	(adv. page xvi Feb. No.)	Fort Dodge.....	118
Discussion of Paper of Dr. Evan S. Evans, Grinnell.....	402	Fort Dodge Session.....	118
Doctor in the Army, The, Lewis Schooler, M.D., Des Moines.....	235	Fort Dodge Session Iowa State Medical Society.....	219
Dropsy, Dr. Solomon Strouse's Method of Treating, M. H.		Fractures, Marching.....	58
Thielen, M.D., Grundy Center.....	317	Glycosuria, Traumatic.....	145
EDITORIALS—		Gorgas, Surgeon General.....	252
Accidents from Local Anesthetics, Reporting of.....	66	Guiteras, Dr. Ramon.....	63
Address of Dr. E. C. Rosenow at Clinton.....	442	Health Officer and the Big Fight, The.....	372
American Army-Surgeons to Serve in Rumania.....	107	Heart Lesions and Heart Murmurs in Relation to Mili-	
American Expeditionary Forces Circular No. 32.....	300	tary Service	59
American Hospital near Front Line.....	373	Heart of Soldiers, Test of Fitness of Irritable.....	191
American Medical Association, 1918 Session.....	257	Hemothorax, Treatment of.....	308
American Medical Association, Supreme Court Decision		Hospital, The Hygeia.....	(adv. page xvi, Jan. No.)
of the Corporate Rights of.....	192	Hospital Problem Partly Solved, Country.....	149
American Products, All.....	(adv. page xviii, Dec. No.)	Hospitals, Standardization of, The American Clinical Con-	
Army Medical Officers, Publication by.....	305	gress	25
Army Medical Service, Changes in the.....	406	Industrial Accident Mortality in America.....	60
Army Surgeons Promoted.....	305	Industrial Workers, Health of.....	254
Application for Membership in the Volunteer Medical		Influenza Cases, Report of, Dr. Charles Enfield, Jeffer-	
Service Corps Authorized by the Council of National		son	446
Defense Approved by the President of the United		Influenza Epidemic.....	(adv. page xviii Dec. No.)
States	375	Influenza Epidemic, Ravages of.....	446
Barracks for Student Corps.....	433, 438	Influenza Symposium at Public Health Association Meet-	
Base Hospital No. 13.....	107	ing	418
Belgian Prisoners in Germany, U. S. A., Section of Com-		Insurance, Army and Navy.....	146
mittee for Relief.....	29	Insurance, Industrial.....	60
Beware of Swindlers.....	68	Janeway, Dr. Theodore C.....	105
Boards of Health, Local.....	222	Keogh, Retirement of General.....	252
Braisted Reappointed, Surgeon General.....	218	Laboratory That Knows How, The.....	309
Calcreose.....	(adv. page xvi Nov. No.)	LaForce, Dr. W. B. and Wife Missionaries in Peking....	31
Canada's Contribution to the Soldiers' Welfare.....	223	Lambert, President-Elect, Major Alexander.....	306
Cancer of the Rectum and Colon in Life Insurance Ex-		Lederle's Pollen "Vaccines" not Admitted to N. N. R....	156
aminations	103	Letter to Physicians, Circular.....	378
Canvassings of the Country are Throwing Much Light on		Licenses, Limited Practice.....	147
the Extent of the Disease, Systematic.....	305	Lier, Lieut. C. N. O. Decorated.....	154
Carcinoma of the Ureter, Primary.....	62	Littig, Lawrence William, A.M., M.D., M.R.C.S., F.A.C.S. 295	
Chamberlain, Dr., in Service.....	441	Littig, Lawrence W., An Appreciation of His Contribution	
Chances of a Soldier.....	108	to Medicine in Iowa, Dr. Walter L. Bierring, Des	
Chlorazene	418	Moines	296
Chloroma	61	Lives Through Four Wars.....	380
Clemenceau, Dr.....	63	McCrae, Lieutenant-Colonel John.....	255
Clinic of the College of Medicine, Annual.....	112	Mal-Practice, Some Questions in Relation to.....	405
Clinic Suggested for Feeble Minded.....	441	Mayo Trail.....	107
Clothes Louse, Methods of Control of.....	304	Medical Bulletin	106
		Medical Editors Association.....	307
		Medical and Legislative Committees.....	146
		Medical Men in Training.....	340

	PAGE		PAGE
Medical Officers Needed, Additional.....	189	Tuberculosis, American Review of.....	99
Medical Reserve Corps.....	162, 189	United States Public Health Service.....	188
Medical Reserve Corps, Every Doctor in the.....	27	Urology of War.....	377
Medical Secretary and Laboratory Assistant.....	60	Varicocele, Operations for.....	147
Medical Schools, Government Supervision.....	257	Virginia Medical Monthly.....	61
Medical Schools will Arrange for Continuous Session.....	251	Visual Standards.....	373
Medical Service, The Needs of the.....	152	Volunteer Medical Service Corps.....	220, 339, 342
Medical Women in the War.....	257	Volunteer Nurses' Aid.....	253
Mental and Nervous Conditions, Disqualifying.....	191	Voluntary Selective Conscription of Physicians, One Form of	372
Military Hospital, New.....	404	Von Baeyer, Adolf.....	105
Military Service, Future.....	189	War Affects Orphanage.....	28
Minnesota Medicine.....	61	War, After the.....	439
Missouri Valley, Annual Meeting of Medical Society of The	441	War Department, Orders from.....	442
Mobilizing the Profession for War.....	105	War Medals Awarded by the Social Service Institute.....	224
Navy's Call for Binoculars, Spy Glasses and Telescopes, "The Eyes of the Navy".....	65	Wassermann Reaction, The Provocative.....	58
Nebraska Idea of Securing Medical Officers for the Army	406	Whitley, Dr. F. E., The Death of.....	339
New Year's Resolution for the Doctor, A Good, (adv. page xviii, Jan. No.)		Woman's League, October Meeting of Professional.....	441
Notes from Germany.....	302	Women Bacteriologists Wanted in the Cantonments.....	223
Nurses as Anesthetists and the Practice of Medicine, Trained	151	Women Physicians for Anesthetic Service, Mobilization of	377
Officers and Committees Iowa State Medical Society.....	275	Women in Volunteer Medical Reserve Corps.....	223
Officers of the Iowa State Medical Society.....	229	Work of Committee on Education and Special Training, The	406
One Army, Only.....	337	Wounds, Paraffin Treatment of.....	145
Our Advertising.....(adv. page xvi Jan. No.)		Wounds, Treatment of Suppurating and Infected.....	309
Owen-Dyer Bill for Increased Rank.....	104	Yeast.....(adv. page xvi Nov. No.)	
Platinum in Unused Instruments, Utilization of.....	452	Yeast in Deficiency Diseases.....	451
Port in France, A.....	341	Yeast, Some Facts about.....(adv. page xvi Aug. No.)	
Pozzi Prof.....	340	Yelt, Dr. Otto.....	103
Prevention of Meningitis, Diphtheria and Other Infec- tious Diseases in the Army Cantonments, (adv. page xvi Sept. No.)		Embolism of Superior Mesenteric Artery—With Report of Case, F. R. Sparks, M.D., Waverly.....	182
Procaine and Novocaine Identical.....	418	Empyema, The Treatment of, C. A. Hedblom, Mayo Clinic, Rochester, Minn.....	328
Psycho-Neurosis, The War.....	188	Fractures, Choice of Operation in, A. P. Stoner, M.D., F.A. C.S., Des Moines.....	283
Railroad Relief Committee Appointed.....	406	Fractures, Some Troublesome, W. H. Fox, M.D., Waucoma.....	186
Red Cross Reorganization Work.....	65	Heart, The Diagnosis and Prognosis of the More Common Valvular Affections of the, Walter L. Bierring, M.D., Des Moines.....	4
Regulations Governing Enlistment of Medical Students and Hospital Interns.....	105	Heart Disease in Children, T. N. Walsh, M.D., Hawkeye.....	143
Relation of Physician to Patient after Operation, The Continued	28	Hemopoietic System, The Pathology and Diagnosis of Dis- eases of the, William E. Sanders, S.B., A.M., M.D., Des Moines.....	423
Reservists Called to Active Duty, Promotion of.....	27	Hematopoietic System, Modern Therapeutic Aspect of Dis- eases of the, F. J. Rohner, M.D., Iowa City.....	426
Resolutions	150	Hospital Notes.....	162
Resolutions of Appreciation.....	298	Hygiene and Sanitation in Camp, Value of, Major Thos. F. Duhigg, Des Moines.....	91
Response of the Medical Profession, An Impression.....	106	Hyoid Bone, Fracture of, W. W. Pearson, M.D., F.A.C.S., Des Moines.....	395
Sacculi and Diverticuli of the Large Intestine.....	307	Influenza, Epidemiology of, John H. Hamilton, M.D., Iowa City	436
Salem and Salenal not Admitted to New and Non-Official Remedies.....(adv. page xviii Jan. No.)		Iowa Medical Men in the War, 30, 64, 107, 153, 193, 224, 258, 302, 344, 379, 414, 445	
Salvarsan, American Manufacture of.....	308	Iowa Physicians who have been Recommended for Commis- sions in the Medical Officers' Reserve Corps, 32, 65, 108, 224, 277, 304, 345, 380, 415, 444	
Salvarsan Swindle Uncovered.....	152	Kidney Diagnosis, Renal Functional Tests and Pyelography in, Nathaniel G. Alcock, M.D., Iowa City.....	45
Selection of Candidates for Air Service.....	256	Kidney, Non-Tuberculous Infections of, M. J. Moes, M.D., Dubuque	41
Shell Shock, Reducing.....	377	Kidney, Summary in Symposium on Surgical Conditions of the, Charles J. Rowan, M.D., F.A.C.S., Iowa City.....	49
Smith College Unit.....	255	Kidney, Tumors of, R. E. Green, M.D., Creston.....	43
Soap, Neutral Sodium.....	156	Larynx, Tuberculosis of the, Robert M. Lapsley, M.D., F.A. C.S., Keokuk.....	20
Social Disease, Fight.....	415	Maniac Depressive Insanity, A Clinical Report, Gershom H. Hill, M.D., Des Moines.....	138
Social Work, National Conference of.....	151		
Spanish Influenza, Suggestions for..(adv. page xvi Oct. No.)			
Stand Behind the Boys.....	299		
State Boards, A Duty Confronting.....	372		
State Board of Health, From the Iowa.....	378		
State Medical Society as a Business Organization.....	100		
Sterilization Water Overseas.....	407		
Stunning the Foe.....	148		
Supreme Authority," "The One.....(adv. page xvi Oct. No.)			
Surgeons Dropped from the Army.....	191		
Surgeon General Appeal for Medical Officers? Why Should the.....	372		
Tetanus Lighted up by Operation.....	24		
Texas, The State of.....	149		
Three Hundred Years Ago.....	299		
Thrombosis and Embolism, Prevention of Post-Operative.....	337		
Todd, Death of Lieutenant-Colonel Frank C., Minne- apolis	276		

	PAGE
Marriages—(adv. page xvi, January, March Nos.) 160, 277, 314, (adv. page xvi Oct. No.).....	416, 452
Maxillary Antrum, Injury to the Face with Involvement of, J. B. Naftzger, M.D., Sioux City.....	365
Medical Lessons of the Present War, Some of the, C. P. Howard, M.D., Iowa City.....	351
Medical News (adv. page xvi, Jan., Feb., Mch., June), 277, 314, (adv. page xvi Oct. No.).....	416, 444
Medicine in Iowa, History of (Part First Extending from 1820 to 1840), D. S. Fairchild, M.D., F.A.C.S., Clinton.....	320
Myocarditis—Its Recognition and Treatment, John R. Walker, M.D., Fort Madison.....	334
New and Non-Official Remedies (adv. page xviii Jan. No.) 156 (adv. page xvi May No.) 228 (adv. page xvi Nov. No.)	
Obstetric Accidents as a Cause of Gynecological Conditions Wm. C. Kasten, M.D., Fort Madison.....	175
Obstetrics, Indications and Use of Drugs in, H. W. Vinson, M.D., Ottumwa.....	171
Obstetrics, Summary of Symposium, Frank M. Fuller, M.D., Keokuk	180
Obstetric Surgery outside of Hospitals, Management of Pre-mature Labor and, C. W. Stephenson, M.D., Milton.....	177
Oration in Medicine, Wm. L. Allen, M.D., F.A.C.S., Davenport	315
Pediatrics, Symposium on, Laura House Branson, B.S., M.S., M.D., Iowa City.....	233
Pellagra in Iowa—With Case Reports, F. A. Ely, Des Moines..	388
Peptic Ulcer, Medical vs. Surgical Treatment of, S. G. Hands, M.D., Davenport.....	287
Personal Mention.....	347
Plague in India, B. Singh Jain.....	368
Pneumonia and its Complications at the Base Hospital, Major Joseph L. Miller, M. R. C., Chicago.....	419
Poliomyelitis, The Etiology and Serum Treatment of Epidemic, John W. Nuzum, M.D., Chicago.....	237
Pregnancy, Pathology of, Paul Reed, M.D., Iowa City.....	168
Prostatectomy, Perineal, Jennings Crawford, M.D., Cedar Rapids	355
Proteids in Therapeutics, Foreign, Eyan S. Evans, M.D., Grinnell	360
Radium in the Treatment of Carcinoma of the Uterus, L. L. Myers, M.D., Iowa City.....	246
Respiratory Infection to Digestive Disturbances in Infants and Children, The Relationship of Albert H. Byfield, M.D., Iowa City.....	385
Rheumatism? What is not, W. H. Rendleman, M.D., Davenport	10
Sanitation in the Zone Immediately Surrounding the City, The Importance of, F. A. Steelsmith, M.D., Tuscaloosa, Ala.	392
Sewage Treatment Plants in Iowa, Operation of, J. H. Dunlap, Iowa City.....	121
Sinuitis, Symptoms and Diagnosis of, C. M. Werts, M.D., F.A.C.S., Des Moines.....	78
Sinus Disease, Non-Operative Treatment of Accessory, Henry G. Langworthy, M.D., F.A.C.S., Dubuque.....	83
Sinuses of the Nose, End-Results of the Treatment of Inflammation of the Accessory, L. W. Dean, M.D., F.A.C.S., Iowa City.....	89
Sinuses of the Nose, Operative Treatment of Accessory, F. E. V. Shore, M.D., F.A.C.S., Des Moines.....	86
SOCIETY NOTES—	
Allamakee County Medical Society.....	230
American Medical Association.....	157
Appanoose County Medical Society.....	158, 230, 276

	PAGE
Audubon County Medical Society.....	403
Auston Flint-Cedar Valley Medical Society, Annual Mid-Summer Meeting.....	313, 447
Benton County Medical Society.....	408
Boone County Medical Society.....	34, 276
Buchanan County Medical Society.....	35
Cass County Medical Society.....	69, 409
Cerro Gordo County Medical Society.....	69, 276
Cherokee County Medical Society.....	69, 230
Clayton County Medical Society.....	69
Clinton County Medical Society.....	159, 312
Dallas-Guthrie County Medical Society.....	69, 230
Delaware County Medical Society.....	409
Des Moines County Medical Society.....	35, 69
Des Moines Valley Medical Association.....	313
Dubuque County Med. Society.....	35, 70, 110, 159, 230, 312, 409
Floyd County Medical Society.....	70
Fort Madison Medical Society.....	230
Hardin County Medical Society.....	35, 276
Howard County Medical Society.....	70
Iowa County Medical Society.....	409
Iowa and Illinois District Association.....	314
Iowa State Medical Society Program Sixty-seventh Annual Session	113
Iowa State Medical Society, Minutes of the Sixty-seventh Annual Session, Fort Dodge.....	259
Iowa State Medical Society, Report of Committee on Arrangements Sixty-seventh Annual Session.....	273
Iowa State Medical Society, Transactions of the House of Delegates Sixty-seventh Annual Session.....	262
Jackson County Medical Society.....	447
Jasper County Medical Society.....	35, 346
Jefferson County Medical Society.....	35
Johnson County Medical Society, 35, 70, 111, 159, 229, 230, 276, 312	
Jones County Medical Society.....	35
Kossuth County Medical Society.....	70
Lee County Medical Society.....	35
Linn County Medical Society.....	231
Marion County Medical Society.....	35
Medical Society will Meet in Des Moines.....	415
Mills County Medical Society.....	35
Monona County Medical Society.....	312
Muscatine County Medical Society.....	71
Northwestern Medical Society.....	232
Osceola County Medical Society.....	36, 409
Page County Medical Society.....	36
Palo Alto County Medical Society.....	231
Plymouth County Medical Society... 36, 71, 160, 232, 312, 384	
Polk County Medical Society..... 36, 71, 111, 160, 232, 276	
Pottawattamie County Medical Society.....	36, 346
Poweshiek County Medical Society.....	36, 276
Research Society of the American Red Cross in France, Preliminary Program of.....	410
Scott County Medical Society.....	71, 150, 447
Sioux Valley Medical Association.....	71
Southwestern Iowa Medical Society.....	112, 312, 384, 409
State Society Iowa Medical Women—1918 Session.....	116
State Society of Iowa Medical Women, Report of the Twenty-first Annual Meeting Fort Dodge.....	274
Story County Medical Society.....	160, 232, 312
Taylor County Medical Society.....	71, 276
Tri-State District Medical Society.....	274, 346
Tri-State District Medical Society, Program Meeting of..	310
Union County Medical Society.....	71
Wapello County Medical Society.....	36
Warren County Medical Society.....	71
Webster County Medical Society.....	313
Woodbury County Medical Society.....	71

	PAGE		PAGE
Stream Pollution in Iowa, Problems of, Lafayette Higgins, C. E., Des Moines.....	163	Tuberculosis, Some of the Later Phases of Points in, J. W. Kime, M.D., Fort Dodge.....	431
Surgery of the Face and Neck, Plastic, J. H. McGready, M.D., Independence	332	Typhoid Fever in Iowa, Some Observations on, Max Levine and H. E. Middleton, Ames.....	37
Surgery, Some Details in Abdominal, A. J., Farnham, M.D., Traer	217	Venereal Disease and Disaster at Arms, Paul Kersch, M.D., Rock Island, Ill.....	290

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, JANUARY 15, 1918

No. 1

LABORATORY DIAGNOSIS OF ATYPICAL CASES OF COMMUNICABLE DISEASES*

HENRY ALBERT, M.D., Iowa City

Professor of Pathology and Bacteriology, University of Iowa and
Director Laboratories for the State Board of Health

The principal assistance which the laboratory renders in the diagnosis of typical cases of communicable diseases is to make a definite diagnosis as early as possible.

Laboratory examinations are of far greater service in the diagnosis of atypical cases of disease, since in such cases, the diagnosis is often entirely dependent on the laboratory findings.

Atypical cases of disease are by no means rare. Indeed, investigations made during the past few years, especially by laboratory methods, have shown that atypical cases of many diseases are very common. In many epidemics the number of cases that depart from the well-defined clinical type are more numerous than the typical ones.

It is very obvious, therefore, that more extensive use should be made of the laboratory for the purpose of clearing up the diagnosis of many cases of communicable diseases.

There are, of course, many kinds of transmissible diseases, such as measles, scarlet fever, small-pox, etc., in the diagnosis of which, laboratory examinations are of little or no value.

I shall briefly discuss the significance of laboratory examinations as an aid in the diagnosis of atypical cases of a few diseases—those which we are most prone to meet with in Iowa, and in which laboratory examinations are of distinct value.

Diphtheria—Not so many years ago a physician would not make a diagnosis of diphtheria unless there was a well-formed membrane which rapidly developed from a thin light colored veil to a thick dirty grayish colored membrane, the forcible removal of which would leave a bleeding surface.

We know now that there are many cases of true diphtheria in which there is but a small

membrane indistinguishable from that of non-diphtheritic follicular tonsillitis. There are also many cases in which the inflammation is limited to redness and slight swelling with no evidence whatever of membrane formation—cases that are ordinarily regarded as simple sore throat. If it is diphtheria, the specific bacilli will be present and are demonstrable by bacteriological examination.

A few years ago, cases of diphtheria repeatedly occurred among the nurses and patients of a certain ward in the university hospital. The cases in which there was membrane formation in the throat and in which diphtheria bacilli were found, were promptly isolated but in spite of such, cases continued to occur. It was then decided to make a culture of the nose and throat of every physician, nurse, patient and attendant in the ward or who had anything to do with the ward. As a result, it was found that several of the nurses were diphtheria bacilli carriers. It was also learned that some of these nurses had, not long before, had a slight sore throat which they referred to as a slight cold. There is little doubt but that these were mild cases of diphtheria—so mild as to not even interfere with their work. The isolation of these persons until the nose and throat was entirely free from diphtheria bacilli, caused a prompt cessation of the outbreak of diphtheria in the hospital. I could cite many other instances of a similar nature that have occurred in various parts of the state.

Whenever diphtheria bacilli are found in a case accompanied by inflammation, it is proper to regard it, for the time being, as a case of diphtheria regardless of the clinical symptoms.

It is true that a person with a sore throat may be the carrier of diphtheria bacilli which are non-virulent, *i. e.*, do not possess disease-producing power. Such may be determined, if necessary, by the virulence test on a guinea pig. The virulence test which consists of inoculating a guinea pig with diphtheria bacilli, preferably obtained in pure culture, is not a very satisfactory test for routine work, since the obtaining of a pure cul-

*Presented at the First Annual Short-course for Health Officers at the University of Iowa, Iowa City, September 21, 1917.

ture is sometimes rather difficult and the test frequently requires four or five days for completion. If diphtheria bacilli are found in the nose or throat of a person, it is best to regard such as being virulent. Such a person should be properly isolated so as not to transmit the germs to others, and an effort should be made to free such persons of the diphtheria bacilli. If in spite of such efforts the bacilli continue to remain in the nose and throat for several, or if the case was one of well defined diphtheria, for more than five weeks; it is then advisable to have a virulence test made. If the bacilli in question are found to be non-virulent, that is, incapable of producing disease, the patient need no longer be isolated. If, on the other hand, they are found to be virulent, the patient should continue to be isolated and further efforts made to get rid of the diphtheria bacilli.

It is also true that a person who is not susceptible to diphtheria bacilli, can at the same time have a sore throat caused by some other organism. Whether or not a person is susceptible to diphtheria, may be determined by the Schick test. The Schick test should be very much more commonly employed than is being done at the present time. It consists of a simple intradermal injection of a small amount of diphtheria toxin. If the person is susceptible to diphtheria, a well-defined reaction occurs. By this test it has been shown that the majority of persons are not susceptible to diphtheria. Such persons need not, therefore, receive any diphtheria toxin in case they should be exposed to infection. On the other hand, even though themselves not susceptible to the disease, they may be carriers of virulent diphtheria bacilli, and transmit such bacteria to others.

In cases of epidemics of the disease, sore throat in all exposed should be looked upon with suspicion and a culture made. If diphtheria bacilli are found, it should be regarded as a case of the disease unless it can be shown by the virulence test or the Schick test that such is not the case.

Typhoid Fever—It has long been known that there are many mild cases of typhoid fever. Some are so mild that the patients do not feel sick enough to be confined to bed—the so-called walking cases. Others even though rather severe, simulate other diseases.

The Widal or agglutination test has been a valuable laboratory aid in the diagnosis of this condition. There are, however, two factors which markedly interfere with the value of this test, namely,—

First, the fact that the Widal test is not posi-

tive in every case of typhoid fever or at least is frequently absent during the active course of the disease when we expect it to be present and when ordinarily it is present.

The investigations of recent years have, however, shown that this discrepancy of the Widal test is more apparent than real, since many of the cases that have been regarded as cases of typhoid fever have been shown to be cases of paratyphoid fever.

Just what proportion of the cases which are ordinarily regarded as cases of typhoid fever are really cases of paratyphoid fever, we do not know. It is probable that the proportion varies with various conditions; for instance, the experience of the last few years have shown that whereas typhoid fever is a rather rare disease in the army, thanks to the efficient work of anti-typhoid vaccination, paratyphoid fever is common—very much more common than in the civilian population under ordinary conditions. This is no doubt due to the fact that under military conditions, persons are very much more exposed to infections like typhoid fever and paratyphoid fever than under civil conditions, and the only reason why typhoid fever is so rare is because of the antityphoid vaccination.

Reports from Europe have been especially enlightening. Widal and Courmont regard paratyphoid among troops as the most significant epidemiologic condition of the war. Landouzy reported that in certain districts of France there were more cases of paratyphoid fever than of typhoid fever. Paratyphoid infection was also very common among the expeditionary forces at the Dardanelles. It is no doubt distributed principally by carriers or mild cases of the disease of which there are many. The A type of paratyphoid bacilli are transmitted through the same vehicle as are typhoid bacilli. Some of the American troops located on the Mexican border last summer were infected with paratyphoid fever, whereas, as is well known, there were but very few cases of typhoid fever.

A few years ago there occurred at Ames a mild outbreak of what was clinically regarded as typhoid fever. A careful bacteriological investigation, however, revealed that it was an outbreak of paratyphoid fever. There is no doubt but that paratyphoid fever is very much more common than we have hitherto been inclined to believe.

The differentiation between typhoid fever and paratyphoid fever is usually difficult. There are certain clinical symptoms which are of some differential value. The laboratory examinations are, however, of very much more definite value.

The agglutination test is negative when made with the typhoid bacillus, especially if the blood is sufficiently diluted. On the other hand, it is positive, as a rule, when made with the paratyphoid bacillus of the proper type. The isolation of paratyphoid bacilli from the blood and feces is possible in many cases, although the identification of the organism requires much time and work.

Fortunately, it is possible to protect against paratyphoid fever by vaccination in the same way as is done for typhoid fever. At the present time many of the soldiers are receiving a triple vaccination of the typhoid bacillus and the paratyphoid bacilli of both type A and type B. These may be injected at one time or separately. Experiments have shown that in either case antibodies are formed against each of the types of organisms. It is no doubt advisable to use the triple vaccination instead of the single typhoid vaccination even with the civilian population.

In the second place the Widal test has lost some of its value in the diagnosis of typhoid fever as the result of the extensive use of typhoid vaccine. This vaccine will cause a formation of agglutinins in the blood which will result in a positive Widal test.

The agglutination test may be positive for a long time and may therefore seriously interfere with the value of the test in the case of suspected typhoid fever.

Very obviously we must come to use other laboratory methods in clearing up the diagnosis of many cases of typhoid and paratyphoid fever. To differentiate between typhoid and paratyphoid fever, we must, when making the Widal or agglutination test with the blood of a suspected patient, try it out, not only against typhoid bacilli, but also paratyphoid bacilli. In differentiating typhoid and paratyphoid fever from other diseases which may simulate such, we must make more extensive use of bacteriological examinations of the blood and feces for the specific bacilli, especially if the patient has been vaccinated, which may have resulted in a positive agglutination test. More extensive use should also be made of blood examinations for the number of leucocytes.

Typhoid fever and paratyphoid fever, if uncomplicated, do not show a leucocytosis, whereas other diseases which resemble typhoid fever clinically, have a well defined and often a very marked leucocytosis.

Cerebrospinal Meningitis—Because of the extremely favorable results that have followed the use of antimeningococci serum in cases of cere-

brospinal meningitis of the specific or meningococcic type, it is extremely important that this serum be used as early as possible in every case of this form of meningitis.

The occurrence of meningitis in epidemic form is usually sufficient evidence that the meningococcus is the cause of it. Occasionally, however, we meet with small outbreaks of meningitis due to other organisms. Frequently the specific form of meningitis occurs sporadically. This atypical method of occurrence of cerebrospinal meningitis, together with the fact that serum treatment is very efficacious, warrants the statement that a lumbar puncture should be made in every case of meningitis. If it is caused by streptococci, pneumococci or other organisms other than meningococci, it will quite certainly prove fatal. If it is found to be caused by meningococci and the antimeningitis serum is promptly given, the chances are three to four that the patient will recover, since the use of the serum has reduced the mortality of cerebrospinal meningitis from about 70 to about 25 per cent. The lumbar puncture is easily made; every physician should be prepared to do it. The diagnosis can, as a rule, be easily and promptly made by a microscopic examination of a stained smear preparation of the purulent fluid. It is advisable, when possible, to take the microscope along when making the lumbar puncture so as to make a definite diagnosis as quickly as possible and administer the first dose of serum at the time of making the diagnostic puncture. In case such is not possible, it is still advisable to have the serum on hand, and administer the first dose of serum at the time and possibly wait for the laboratory report, if such can be given within a few hours, before giving the second dose of serum.

Poliomyelitis—The epidemic of poliomyelitis or infantile paralysis which occurred in this country last year, enabled physicians and laboratory workers to make extensive examinations and investigations which have resulted in a considerable addition to our knowledge of the disease. Although it has been known for a long time that some cases of the disease are not accompanied by any or only very slight paralysis, it was not believed until demonstrated by the investigations of last year, that in some epidemics, more than 50 per cent. of the cases of poliomyelitis are of the abortive type, that is, do not show evidence of paralysis clinically. There are few diseases more easily diagnosed than poliomyelitis with a frank flaccid paralysis. On the other hand, there are few diseases more difficult of diagnosis clinically than the atypical non-

paralytic cases which are of very great importance from the standpoint of the transmission, and therefore, of the prevention of the disease. It is in the diagnosis of such cases that laboratory examinations have proved to be of great value. It should be said, however, that there is no absolute "laboratory diagnosis" that can be made during the life of the patient, although there are a number of laboratory findings which in connection with the clinical symptoms, are of great value in establishing a diagnosis. The laboratory tests which are of greatest importance in poliomyelitis, are those which are applied to the spinal fluid, and here it is the negative rather than the positive findings that are of value.

The spinal fluid in cases of poliomyelitis is somewhat increased in amount, presents a slight ground glass appearance or haziness when viewed by strong transmitted light. This is due to an increase of the number of cell elements. This bedside test is of great diagnostic value. A second microscopic test which may also be applied at the bedside is the so-called foam test and is dependent on an increased amount of albumen and globulin in the spinal fluid. Normal spinal fluid thus shaken will yield but a small amount of foam which soon disappears, whereas fluid from cases of poliomyelitis will yield a considerable amount of foam which persists from a half hour to more than an hour.

Microscopically, the fluid is characterized by an increase in the number of cells which are for the most part of the mononuclear type and are principally lymphocytes, although there are also quite a large number of endothelial cells.

The spinal fluid from cases of poliomyelitis differs from that of cerebrospinal meningococcic and other purulent forms of meningitis by the fact that in the latter, the cells are principally of the polymorphonuclear type and the infecting organism can be demonstrated. It differs from tuberculous meningitis in that the latter is more clear, contains less albumin and globulin, and the specific microorganism can usually be easily demonstrated. The differentiation from acute syphilitic meningitis is made principally by the Wassermann test which is positive in the latter. It differs from the fluid of meningism occurring in connection with convulsions and a number of infectious diseases in that in the latter, the fluid is clear and practically always normal in character except for the increase in amount.

With these findings, laboratory examinations in cases of poliomyelitis are of great value when considered in conjunction with clinical symptoms.

It will thus be seen that the laboratory can be of great service as an aid in the diagnosis of atypical cases of a number of our more common and important communicable diseases. The laboratories of the State Board of Health stand ready at all times to give such assistance as may be possible.

THE DIAGNOSIS AND PROGNOSIS OF THE MORE COMMON VALVULAR AFFECTIONS OF THE HEART

WALTER L. BIERRING, M.D., Des Moines

In accepting the subject assigned, the effort has been made to approach it from the viewpoint of the general practitioner, and I hope to impress you that he has a better opportunity to determine the problems concerned with heart affections, than the consulting internist or hospital clinician.

To those who may doubt this assertion, I beg to cite the example of Dr. James Mackenzie, who from the experience of twenty-five years in general practice before moving to London about eight years ago, has made more contributions to our knowledge of heart disease than we have received from any other source.

There can be no doubt that observations of the greatest importance have been made in clinical laboratories and hospital wards but there is so little opportunity of seeing a heart affection in its early stages and during its progress, because of the limited time that the patient usually spends in the hospital.

Again, it should be remembered that only a very small proportion of the sick visit a hospital. The majority of persons, when they first notice there is something amiss about the heart, turn to their family doctor and continue under his care, and so it is the general practitioner who sees heart disease in its early stages and has the opportunity of finding out what conditions predisposed to it, and of following it through all its stages.

All statistical data as to the frequency of individual valvular lesion and its prognostic significance, the real problem in each instance is to determine the functional efficiency of the heart in connection with these lesions, its response to effort, the beginning of heart failure, its degree, and ability to recover under treatment.

It is the purpose of this inquiry to emphasize the importance of the patient's sensations as they are often a better guide to determine the nature of the lesion, the onset and progress of heart

failure, than a careful interpretation of physical signs.

An inquiry into the history of the probable causes of a heart affection are helpful for the diagnosis of the lesion and the subsequent prognosis.

A previous illness of chorea, or acute rheumatism, which naturally includes the different tonsillar infections, is a frequent etiologic factor in a mitral lesion. A lues infection is much more likely to affect the aorta and aortic valve. The symptoms of heart affection in the older patient usually indicates arterial disease, and consequent involvement of the aortic valve, with degenerative changes in the heart muscle.

It is of equal importance to determine, by a recital of the patient's sensations in connection with the action of his heart under exertion, how it continues or fails to respond to effort, and the progress of the disturbing sensations.

The question which most interests the patient, which he requires you to answer is, whether or not his present symptoms indicate heart failure, or foreshadows its occurrence.

I like to quote a definition of heart failure as given by Mackenzie—"as that condition in which the heart is unable to maintain an efficient circulation during the efforts necessary for the daily life of the individual." This embraces cases of advanced failure as well as those in which it is just beginning.

The different parts of the circulatory system are so constructed as to facilitate the flow of blood and so to favor the work of the heart. The muscle fibres supply the force which propels the blood. So far, then, as the efficiency of the circulation depends on the flow of the blood, the muscle force is the only factor concerned and the inability of the muscle of the heart to supply an efficient force is the direct cause of heart failure.

The study of heart failure, therefore, practically resolves itself into an inquiry into the circumstances which have impaired the functional efficiency of the heart muscle.

It can be stated with propriety that there is a reserve or rest force to be considered in estimating the efficiency of a heart, and the ease with which signs of exhaustion are produced, more than the signs themselves, is the earliest indication of heart failure.

The response to effort on the part of the heart may also express the measure of its efficiency.

Normally, there can be no fixed standard, as it will vary with each individual examined. The amount of effort that can normally be put forth without distress, seems the only practical stand-

ard by comparison with which it can be determined, whether the sphere of the heart's response to effort is restricted. As the sensations of exhaustion or restriction of the "reserve force" persist, or become more easily provoked, it indicates the degree of the heart failure that exists.

When objective signs of heart failure appear, as dropsy and dyspnoea, at rest or after slightest exertion, the heart failure has become more marked. And when such objective signs persist while the body is at rest, the "rest force" is being encroached upon, and the "reserve force" is practically exhausted.

At this point it is well to observe that subjective symptoms of heart failure are never absent when the heart's efficiency is in any way affected, while objective signs are often absent in cases of extreme exhaustion.

In examination of patients with heart affections, we are accustomed to recognize inefficiency by symptoms like dropsy and enlarged liver, but there is a period long antecedent to the period of extreme failure in which due notice is given, and to elicit these signs should be a great aid in analyzing a particular case.

Breathlessness or dyspnoea on exertion, with its more aggravated type, breathlessness at rest or orthopnoea, special disturbance in breathing as Cheyne-Stokes respiration and cardiac asthma, indicate varying degrees of heart failure. These signs while not necessarily characteristic, are suggestive of a mitral lesion. Fainting on the other hand is more common with aortic disease.

Whatever explanation may be offered for the symptom of pain, or angina pectoris, it is usually associated with other evidences of cardiac exhaustion. The pain is frequently associated with effort, and in most cases can be provoked by effort or excitement. As a diagnostic sign, it is most suggestive of disease of the aorta and the aortic valve; when occurring in the young person, the thought of a syphilitic aoritis should always be entertained. Appearing after fifty years of age, it is a warning sign of degenerative changes incident to arteriosclerosis, and frequently the forerunner of cardiac exhaustion signs. It is interesting to note that as the tendency to breathlessness increases, the heart dilates and dropsy supervenes, the attacks of angina may completely disappear.

Having dwelt on the importance of the patient's sensations in obtaining a knowledge of the heart's efficiency, the matter of physical signs and their significance may be considered. These usually refer to structural changes and include

murmurs, changes in the size of the heart, and arrhythmias or irregularities.

There is no fallacy so fondly cherished by the profession as that a heart to be normal and healthy, must be of certain size, have the rhythm of its beat regular, and its sounds clear and free from any suspicion of modification. The presence of a murmur is often considered to be inconsistent with the idea of a healthy heart, yet no fact is more clearly established than that physiologic murmurs occur in youth, as well as variations in rhythm; again, changes occur in the edges of valves in the form of a thickening, as a part of the changes of age, so as to produce murmurs in people who lead strenuous lives, yet who never suffer from any form of heart failure.

Evidently too much importance is given to the presence of a murmur by itself, when it never should be considered, except in connection with the associated phenomena of impaired efficiency of the heart.

This inability to properly judge a murmur, leads to perfectly healthy men today being rejected from the Army and Navy, or invalided out of it, because a murmur has been detected in their hearts. Others, who present themselves for life insurance, are rejected or made to pay a higher premium for the same reason, while many an individual is subject to prolonged treatment and great restrictions in mode of life because these early superficial observations have misled the attending physician.

A systolic murmur needs to be carefully differentiated from functional or accidental murmurs in the diagnosis of mitral insufficiency, and here again associated symptoms must be the determining factors.

The most instructive murmurs are those produced by stenosis of the mitral valve. While most frequently a sequel of rheumatic fever, it is rarely, if ever, to be detected during the causative illness or convalescence. It is often not until years have elapsed that the first faint sign of stenosis becomes apparent. A mitral stenosis frequently is progressive, although in certain instances it becomes arrested and remains free from other symptoms except the murmur, for years.

The characteristic murmur in mitral stenosis is presystolic, yet it undergoes changes that are very instructive. When the murmur more nearly fills up the diastole, the narrowing of the orifice has become so extreme as to afford for the passage of blood little more than the characteristic slit with which we are all familiar in the post-mortem findings of advanced mitral stenosis.

The history of the time of the causative illness and the nature of the murmur existing at the time of the examination, affords an opportunity for determining the degree of stenosis present and the probable rate of progress.

As dilatation occurs and other signs of heart failure appear, the murmur likewise changes and the presystolic element is lost, to return again as the efficiency of the heart is improved by rest and digitalis.

Frequently heart failure in mitral stenosis occurs very suddenly, often ten to fifteen years after its beginning, and with it the change in murmur as noted above, and at the same time the heart becomes very irregular in its rhythm; this constitutes a very instructive stage of mitral stenosis, and a proper familiarity with varied phases of this condition is necessary to appreciate the essentials in the recognition of heart disease and heart failure.

The condition is called auricular fibrillation, having been variously termed paralysis of the auricle, nodal rhythm, etc. It was described by Mackenzie some twenty-five years ago, as paralysis of the auricle. The term auricular fibrillation was first used by Lewis in 1910. The term fibrillation is applied to the condition of the muscle fibres of the heart, in which the individual fibres instead of contracting in an orderly sequence during systole, contract rapidly and independently of one another. The auricle, when in a state of fibrillation, presents an entirely different aspect from that which it does during its normal action. It stands still and systole never takes place, and meanwhile the walls quiver with fibrillating contractions. If the ventricles pass into fibrillation, death is instantaneous.

In the majority of cases, when auricular fibrillation sets in, it persists for the remainder of the individual's life. It has been known (Mackenzie) to persist for sixteen years. In some cases it may appear, last for a few hours, disappear, and never recur; again, it may recur at frequent intervals for some weeks or months, and then disappear. The tendency to recurrence usually increases until it becomes permanently established. To state that 60 to 70 per cent. of all cases of serious heart failure (with dropsy) met with in practice, owe their failure directly to this condition, or have the failure aggravated by its presence, indicates its frequency and importance.

The condition is best recognized in the polygraph tracings, as the auricular wave disappears entirely in the jugular and liver tracings, but through the careful work of Mackenzie and Lewis, the clinical signs have been so co-related

that the condition is readily recognized in general practice.

The most common evidence of the condition is the presence of irregular action of the heart of a very disorderly kind. It is that form of irregularity so frequently met with in the elderly and in patients with hearts damaged by previous rheumatic infection. This irregular heart's action has so long been recognized in connection with mitral stenosis, that the irregular pulse is sometimes described as the "mitral pulse." Another guide is that the heart beat and pulse do not coincide in rate or rhythm, owing to incomplete transmission of impulses. Signs of heart failure usually accompany it, but these signs are no different than common to heart failure induced by other conditions. The effect of digitalis on the heart with auricular fibrillation is very striking. In this condition the heart is peculiarly susceptible to digitalis, and apparently this peculiar reaction to the drug is an attribute of the abnormal heart action. That this reaction is distinctive seems well established and some go so far as to state that this enables us to indicate with precision the hearts which will be benefited with the drug and those upon which the drug has no effect.

A brief discussion should be given to the significance of blood-pressure in heart affections. After devoting rather close study to the subject of blood-pressure during a number of years, I have still no clear conception of the part that heart muscle plays in the production of blood-pressure. I regard it as distinctly unfortunate, the importance that has been given to the sphygmomanometer in life insurance, as an aid in diagnosis, as a guide in treatment and in prognosis, for blood-pressure like a murmur should never in itself form the basis of an opinion.

In cases of aortic insufficiency, the large pulse pressure, with the abnormally low diastolic pressure, is characteristic and a good corroborative sign.

A small pulse-pressure suggests a failing myocardium, but usually at this time other signs of heart failure are well marked. In the condition of auricular fibrillation so significant in itself of heart failure, where the pulse-pressure must necessarily be low, it is doubtful if the estimation is reliable, since the brachial and radial beats do not coincide with the heart's action.

I can only summarize the essentials of prognosis in the heart affection under discussion, some having been dealt with in connection with different symptoms.

Every form of heart disease has to be gauged from the standpoint of functional efficiency of the heart muscle, and its ability to overcome any embarrassment in its work. The personal element and patient's daily routine enter largely into the composition of the disease picture; it is evident that an impaired heart in a man who can lead a life of leisure has a different meaning from where a man is compelled to lead a strenuous and fatiguing life.

In determining the response to effort, it is necessary to consider whether the limitation is stationary or progressive. If stationary, the outlook is favorable if the patient is capable of living within his limitation. On the other hand, if the field of response is gradually more restricted, regard must be given to the rate of progression of this limitation, the ability of rest to restore the heart weakness, and the ability of the patient to lead a more restricted life.

When there are objective signs of heart failure, such as dropsy, enlarged liver, and orthopnea, and when these signs can not be removed, the patient's future may be reckoned in months.

There are a number of traditions in regard to the prognosis of certain valvular lesions, that experience in practice does not corroborate. Graham Steele made a startling statement that "no one ever dies from mitral regurgitation" which I believe we can subscribe to if we mean that with a mitral systolic murmur, heart failure occurs, not because of the regurgitation, but because there were present other factors which provoked it, such as myocardial disease or impairment.

The significance of aortic regurgitation is usually regarded in a dangerous light; standard text-books treat the subject with gravity. Yet, I have been surprised at the number of patients with this lesion, that I have been able to observe for a period from ten to fifteen years, who were free from any distressing symptoms, and able to do very active work; the degree of enlargement of the left ventricle seems to be a factor, because where the same is less marked the outlook is more favorable. As the hypertrophy increases, the integrity of the muscle decreases and soon shows signs of heart failure.

The aortic disease occurring in the middle aged and elderly, which is due to atheromatous changes, seldom leads to serious heart failure.

Syphilitic disease of the aorta and valve is often serious. It may be arrested by energetic treatment, but often it extends rapidly, and death ensues within a year or two of its starting.

The signs of heart failure in aortic regurgitation are somewhat peculiar—dropsy rarely occurs; attacks of pain are a frequent evidence of exhaustion, as is also violent beating of the heart; extreme dyspnoea is not infrequent, sometimes producing death in the first attack.

The condition is less susceptible to treatment and recovery less frequent. One may see very marked recovery from heart failure of mitral stenosis, but not in aortic disease; auricular fibrillation in mitral stenosis permits of recovery, but not so in aortic disease. Sudden death is more common in aortic disease, although in mitral stenosis with auricular fibrillation, patients often die suddenly within a few days after its appearance.

The pain of angina pectoris, as to degree and duration, is a factor in prognosis. When light in character and readily relieved by rest and other appropriate treatment, it has no special influence on the outcome, but when it rapidly recurs, persists, or occurs with the slightest exertion, it can safely be regarded as a sign of early termination of life.

I wish to emphasize again that to properly judge the outcome of a certain heart affection, it is necessary to be conversant with the history of the earliest signs of heart failure, then response to rest and treatment, the behavior of the heart in the patient's daily routine, the number and character of recurrent attacks, and the persistence of the graver symptoms of heart failure, and these alone permit of a logical conclusion.

Finally, the opportunity is with the recent well trained graduate who in general practice will be able to observe patients during a period of ten to twenty years, to make the most valuable contribution to our knowledge of heart affections.

Discussion

Dr. C. P. Howard, Iowa City—We certainly have listened to a remarkably interesting paper this morning. However, I can not plead the excuse made by the opener of discussion of the previous paper—that the entire ground has been covered. A few days ago Dr. Bierring and I got together and we agreed that it would be impossible for him to cover the entire field of diagnosis and prognosis of mitral and aortic disease. In his opinion, it was hardly necessary for me to look over his paper, as he felt sure there would be many questions that should be emphasized and brought before this body that would be impossible for him to cover in the time allotted. And yet I would like to plead the same excuse as that offered by Dr. Moerke, because in his fifteen-minute paper Dr. Bierring has so nearly covered all the problems facing us as general practitioners or as consultants when the question of mitral and aortic

valvular disease confronts us. I need hardly remind you that we must regard this problem first of all from the standpoint of the stage of compensation or decompensation. We in hospital service see chiefly the end results—the stage of decompensation, when any general practitioner and even the lay public can make a diagnosis of cardiac disease. That is not the stage which is of interest to you or really of interest to the patient. Therefore the disjointed remarks I have to make will have to do entirely with the stage of compensation in mitral or aortic disease. I have been very much struck by the fact that in teaching students and in meeting the practitioners of the state, I have found a tendency to always introduce into the diagnosis of the case only the most modern methods, neglecting the old clinical findings of our fathers and grandfathers in the diagnosis of cardiac disease. It is very doubtful whether we have made any advance from a practical standpoint by the modern methods of cardiac diagnosis. The electrocardiogram, even the sphygmogram, fluoroscopic examination, etc., are only late aids in the diagnosis and prognosis of these cases. The old-fashioned method of inspection and palpation and the less old-fashioned method of percussion, will often give more valuable data than the most modern laboratory method can afford. I think there is a tendency, especially among the younger members of the profession, to neglect or overlook that fact. They are too prone to turn to the stethoscope to make the diagnosis of mitral and aortic disease, when the diagnosis lies a-begging to the eye. Dr. Bierring has already stated that there are certain characteristic symptoms of mitral and aortic disease. We possibly would like to emphasize a little more strongly the importance of the history as a guide in arriving at a diagnosis. Too much emphasis cannot be laid upon the importance of previous infections. In going through the routine examination with a suspicion of mitral or aortic disease in mind, one must turn again and again to the infectious history of the patient. Syphilis, of course, is a *sine qua non*. It is not satisfactory, however, to merely ask,—Have you had rheumatism? Many people will say no, when as a matter of fact they have had evidences of rheumatic infection, and the old rheumatic cycle of the English clinician, Cheadle, must never be neglected. The erythema group and chorea are just as important as a determining factor of endocarditis as is arthritis or tonsillitis.

Dr. Clinton E. Harris, Grinnell—I arise not with the hope of being able to contribute to the discussion, but to extract something from it if I may. I should not have said anything if Dr. Bierring had not broached the subject of functional murmurs. In making examinations for insurance, during the last six months, it has been my misfortune to be confronted by this malady to an unusual extent. The directors who manage the medical department of our insurance companies, send out statement forms which we are supposed to observe in making our ex-

aminations. They ask us to make reports on what we find. It has been my misfortune or perhaps a coincidence that in the last eight months I have stumbled on a large number, relatively, of what I am pleased to call functional or cardiovascular murmurs. I mean by this that I have been unfortunate in locating loud, invariably systolic, bruits over the subclavian and common carotid regions, and this in apparently robust individuals, when I at least was unable to detect any abnormal valvular sounds. I did not draw any conclusions, but simply reported the findings to the directors, and I must admit that the results have been rather unfortunate so far as I am concerned. In the case of one of the companies I addressed a specific inquiry to the medical director who had issued a specific injunction against functional or cardiovascular cases of any sort, simply saying "We don't want them"—meaning this: "If you as examiner discover a functional or vascular symptom of any kind, we are going to assume for our own protection that it is organic." That is all right, they have a right to do it, but I want some one in authority to tell us this morning what they mean, or if the reply to this interrogatory is true. In the report on one case I stated that there was a definite systolic murmur, but that I was absolutely unable to determine the presence of any abnormal valvular sound, and the director replied: "Will you be kind enough to explain what you mean?" I have found the literature scanty on this subject. Sometimes these murmurs persist over weeks, in some cases they become manifest only on exercise, and none of the murmurs I have reported disappeared on exercise. I simply say that so far as I am concerned they do exist and that in most of the cases I am unable to determine the presence of any valvular sounds that are abnormal.

Dr. Eli Grimes, Des Moines—As regards the diagnosis, one symptom is quite typical; that is, a large percentage of these heart cases come in with a history of mild digestive symptoms, and that is about all. The digestive disturbance has been subjected to all sorts of treatment, and after the patient is treated systematically the digestive trouble disappears. This point was not emphasized.

Dr. F. M. Pottenger, Monrovia, Cal.—In my work with tuberculous patients, I have had opportunity to observe a great deal of heart strain, and have learned to note that the first symptoms of heart strain are usually those of an unstable nervous condition. These patients become anxious, experience sleeplessness, their appetite lags, and they often have distinct digestive disturbances. I have learned when such symptoms are present to bear in mind the possibility of strain on the heart muscle; and often find these as early premonitory signs. Sometimes they appear before and sometimes they are accompanied by pain, palpitation and shortness of breath. To those of you who are not working with patients suf-

fering from thoracic diseases, I would like to call attention to the fact that we have a pain in the precordial region and radiating down the left arm which is caused by the disease of the lung and pleura adjacent to the heart. I have recently had an experience of this kind in a surgeon whose father and grandfather died of angina. He, of course, was fearful that the attacks were due to the heart when he experienced the pain running down the arm, but inasmuch as he was forming a cavity near the left border of the heart, I felt probably it was due to the extra cardiac disease. Relief was obtained in a few days when a tuberculous abscess opened with a free discharge of sputum.

Dr. Bierring—I appreciate what was said by Dr. Howard in regard to the importance of the history. If at the onset of heart failure the history is taken in an endeavor to ascertain the early symptoms, I believe this furnishes a better guide as to the efficiency of the heart than can be obtained from the single examination which one is permitted to make. It is unfortunate that so much reliance is placed upon the adoption of mechanical aids for the recognition of heart disease. As each new instrument or apparatus is introduced, we become enthusiastic, thinking it will aid us in every case. If in our work we would only go back to the old fundamental, sensible rules laid down by our ancestors in medicine, these would carry us much farther. I do not know in what way we could better do service than to in some way re-educate the profession along this line, and particularly those who are directors of insurance companies and other large bodies in connection with which a single examination is of so great importance, because while you may for the moment take notice of the rejection of a life insurance application, you do not know what that means to the future of the individual. And to think that such rejection may be founded on just an improper interpretation of a sign that probably has no significance at all. I wish to again emphasize that the diagnosis of heart disease should not be made upon a murmur alone if there is no other symptom of heart failure present. As regards the relation of digestive disturbance to heart failure, I was impressed years ago by the advice of physicians living in the higher altitudes of this country, who stated that in the cases of heart trouble developing in people who came from lower altitudes, the earliest symptoms were often digestive disorders, even to a rather severe diarrhoea. And these physicians quickly relieved the condition by giving digitalis. They recognized these early indications of cardiac impairment as due to removal to a higher altitude or to changed environment. So I likewise have come to consider symptoms of digestive disturbance which occur particularly in the summer time as possible early signs of a failing heart, and often respond best to digitalis or other appropriate medication for circulatory failure.

WHAT IS NOT RHEUMATISM*

W. H. RENDLEMAN, M.D., Davenport

To better understand what is not rheumatism, let us first consider what is rheumatism. Rheumatism, or better, acute rheumatic fever, is an acute infectious disease, due to the streptococcus rheumaticus or some other strain of streptococcus gaining entrance, usually through the tonsils, characterized by general febrile disturbances with local manifestations in the joints and frequently complicated by endocarditis, pericarditis and chorea. It is beneficially influenced by the salicylates and terminates in recovery without residual change in the joints. Recurrent attacks of so-called "rheumatism" resulting eventually in deformity, is not rheumatism.

The terms "rheumatism" and "acute articular rheumatism" are unfortunate since they focus attention on the joints. "Rheumatic fever" is better but still not comprehensive enough. In this affection, arthritis is only a symptom, and while perhaps the most striking, by no means the most important. Endocarditis is just as much a symptom as arthritis and of far more importance. It is possible to have the infection of rheumatic fever without joint involvement. Chorea may be another manifestation of the same bacteræmic process.

"Chronic rheumatism" has no place in medical nomenclature for it gives the false conception that rheumatic fever may become chronic. These chronic cases belong to the larger and more indefinite group of arthritides presently to be discussed.

The term "rheumatism" as generally applied to a large group of chronic arthritides, is wrong, and if this word must be preserved, its use should be restricted to the above described affection more appropriately called rheumatic fever.

Having now briefly considered "What is rheumatism" we may attack the larger, more obscure and less understood group of arthritides which are not rheumatism. Bacteriological studies have removed a number from this obscure list and grouped them with specific diseases of known etiology as gonorrhea, syphilis, tuberculosis and other acute infections sometimes complicated with joint disturbances. Recent studies by Rose now, Billings, Davis and others, threaten to again remove from this list of unknowns a still larger number, and class them according to the infecting organism present.

It is safe to say that the consensus of opinion

today favors the infectious theory of the etiology of nearly all varieties of chronic arthritis whether or not the organism is found. On account of the anatomy of the joints, the arthritis can only be secondary to infection elsewhere and borne to the joint by the blood or lymph streams. This "infection elsewhere" constitutes what has of late become so familiar, even to the laity, a focus of infection. By a focus of infection is meant a circumscribed area in which grow pathogenic organisms. The focus may be primary or secondary. The primary focus is usually in tissue connecting with cutaneous or mucous surfaces such as the throat, mouth, bronchial tubes, ears, nose, gall-bladder, appendix, rectum and genito-urinary tract. A focus in any of these locations, however, may be secondary and of hematogenous origin.

Secondary foci may be anywhere in the body and are always hematogenous or lymphogenous in origin. These secondary foci may continue to feed the circulation long after removal of the primary focus which may explain many failures and disappointments in the treatment of arthritis. Of what immediate benefit is it possible to obtain from removal of a small primary focus when there remain one or more much larger secondary foci in the body? Removal of a diseased tonsil or an alveolar abscess may prevent further entrance of streptococci into the blood but has no influence on those already entered.

Repeated invasions of the joints from these foci, produce changes of a permanent nature, depending on individual resistance and joint injury, which we designate as chronic arthritis. To understand the changes in a chronic arthritis it is necessary to recognize that the infecting organism is of low virulence and not to be compared to that of the streptococcus pyogenes. The infection is in the nature of an embolism of the small terminal arteries about the joint which with the accompanying endothelial proliferation lessens the blood supply and brings about a state of malnutrition resulting in retrograde metabolism of the joint structures.

It is not my purpose to burden you with worn out classifications of arthritis, all of which have served useful purposes. Arthritis Deformans, Rheumatoid Arthritis, Osteo-Arthritis and others are familiar terms yet none has the same meaning to two persons. Each represents the disease from the viewpoint of the particular worker who first described it. None conveys a definite picture as understood at the present time. Chronic arthritis will better serve to cover the group under discussion. To those due to infection, as we

*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, May 9, 10, 11, 1917, Des Moines.

believe the majority are, the name "Chronic Infectious Arthritis" is a good one. Eliminating from the present discussion the well defined etiologic types of gonorrheal, tuberculous and syphilitic arthritis, recent studies have proven that chronic infectious arthritis is most often due to strains of streptococci. The streptococcus family is large and its members have the ability to change their form with change of environment. This transmutation as shown by Rosenow, explains the different results obtained by different observers, and we now know that the micrococcus, the streptococcus viridans, the streptococcus hemolyticus and streptococcus mucosus found in arthritis by different workers, belong to the same family. Other germs have been found to cause arthritis. Dick has reported two cases due to Friedlander's bacillus in which he isolated the organism in pure culture and reproduced the arthritis in rabbits. The meningococcus, pneumococcus and colon bacillus have also been found. No doubt there are some arthropathies such as are found in organic nervous diseases and others occurring in old people related to disturbed blood supply which may be purely degenerative and not due to any infecting germ. Gout seems to be the result more of disturbed metabolism than of infection.

The forms of arthritis above described are distinctly not rheumatism. There are many other conditions still less related to rheumatism which are more often and with less justification confused with rheumatism. I refer to sciatica, myositis or so-called muscular rheumatism, fibrositis, osteomyelitis, flat-foot, tabetic crises, and in fact anything causing pains in or near a joint. It is necessary only to mention these, for an examination of the patient, which unfortunately is often not made, will reveal the true nature of the affection and avoid the prolonged use of salicylates and other unnecessary anti-rheumatic remedies which can only burden the patient and make more difficult his cure. Luetic and tuberculous arthritis should especially be considered in the study of all cases for a correct diagnosis means so much for the future of the joint. Often an acute osteomyelitis is treated as rheumatism until a considerable portion of bone is destroyed and healing is made impossible for months or years when an early operation would have limited the disease to a few weeks.

In the treatment of arthritis, recent years have witnessed striking changes in methods. From the era when all cases were filled with salicylates and starved by the withdrawal of proteid food to the present, when needless sacrifices of inno-

cent tonsils and teeth is the vogue, is but a brief space of time. The pendulum has swung to one extreme and is on its way back to the opposite extreme. As is usually the case, the truth probably lies between. The enthusiasm at first manifested over focal infection has done much good in causing these patients to get deserved thorough examinations, but unfortunately, frequent failure to obtain immediate results from removal of supposed foci is causing a reaction which may for a time discredit the whole theory of focal infection. More than anything the profession has been taught that these sufferers require a most thorough examination to find any possible source of trouble so that no longer is the patient asked a few questions, given salicylates and put on a non-protein diet allowing a removable infection to continue to feed the body with poison for months or years.

To detect the cause of an arthritis requires that all possible locations be searched for foci, the services of various specialists often being required. The tonsils are investigated for evidence of infection, crypts filled with pus, or signs of previous attacks of tonsillitis. Filled or crowned teeth and teeth with dead nerves should be radiographed for blind apical abscesses and pyorrhea. The accessory sinuses and ear may harbor streptococci for years. Having explored the head thoroughly, I would suggest to those whose minds never see below the neck that other remote parts of the body may just as well furnish the source of trouble. The lungs, heart, gall-bladder, appendix, genito-urinary tract including especially the prostate, seminal vesicles and tubes, the rectum and in fact all the extremities, should receive the same thorough tests as the mouth.

Any foci found should be treated according to their nature and location. The complete removal is desired. The mere presence of a focus, however, does not prove its connection with the arthritis. Many innocent foci may remain in the body for years without the least harm. The conclusion has often been too lightly drawn that the presence of a coexisting focus and arthritis in the same individual represent cause and effect. This has led to frequent disappointment in results. Another cause of failure is the fact that removal of the primary focus does not lessen the immeasurably larger number of germs already in the circulation, joints and secondary foci throughout the body. Its removal will, however, prevent further absorption with the possibility of more joints becoming involved, endocarditis or other lesions in the body and will give nature a chance to destroy infection already in the system.

Before advising radical means of elimination, one should weigh carefully every case. A toothless person without a focus, if his arthritis is not improved thereby, may be in a worse condition than if he had his focus and also his teeth. I would caution against the physician who has the teeth or tonsils removed without first thoroughly investigating elsewhere for other causes. Many useful teeth have been removed and many tonsils represent the burnt sacrifices of humble patients when a careful examination would have discovered other more probable causes. Having found foci which seem likely causes of an arthritis, the same should be thoroughly removed if possible, giving the patient the best possible chance of a permanent cure.

Other methods of treatment such as rest, immobilization, hydrotherapy, baking, massage and electricity are common knowledge and need not be detailed here. Diet has long been thought to have an influence on the joints from which arose the metabolic theory of arthritis. Pemberton, while not denying that infection plays the leading role, maintains that these patients have an intolerance for carbohydrates and proteins, and that the intake of these food elements must come below this tolerance line. He puts the patient to bed and after estimating his ordinary diet, places him on 1100 to 1500 calories per day for a while when the amount of carbohydrates and proteins may safely be gradually increased. He finds marked improvement even where no focal cause has been found or removed. As generally prescribed, dieting has been overdone and anemic arthritics have been harmed by the withdrawal of proteids. Many of these patients are so weakened that recovery from their arthritis is impossible until they are restored to better general health.

I shall conclude with a discussion of the use of vaccines, serums and proteins in arthritis. All admit that much less has been accomplished by vaccines and serums than was at first hoped for. In gonorrheal arthritis, better results seem to have been obtained than in other forms. Some difficulty may arise in obtaining autogenous vaccines, owing to the property of transmutation of the streptococcus, whereby the organism in the joint may be different from that in the original focus. Vaccines produced from focal cultures would then not be sufficient, but to get a true autogenous vaccine, would require cultures from the joint, or as Rosenow recommends, from the glands draining the joint. The difficulties may be so great as to make the method impractical. Benefits from stock vaccines and from serums are at best a hit and miss affair, and what good

results have been obtained were probably from their non-specific action presently to be described.

Since the work of Wright, all results from the treatment of disease with vaccines have been thought due to a specific action, *i. e.*, a certain condition is benefited by treatment with vaccines prepared from the particular germ causing it. So firmly is this idea fixed that it has been only the last two or three years that a non-specific reaction has been recognized. For years, occasional remarkable results have been obtained in pneumonia, typhoid, arthritis and other febrile conditions by the promiscuous use of vaccines, phylacogens and serums without any scientific explanation on the basis of specificity. It was noted that beneficial results were obtained only when a sharp reaction followed their use. This reaction usually does not occur by the ordinary subcutaneous method of injection. Typhoids given intravenous injections of 75 to 100 million of killed typhoid bacilli, have frequently been known to terminate immediately by crisis. Kraus and Luedke obtained the same results with colon bacilli and later Luedke showed that proteose had the same effect. The reaction, according to Vaughan's theory, is due to the splitting in the blood of the protein into a toxic and non-toxic portion, the toxic portion causing chill, fever and leukocytosis. Miller and Lusk, Culver, Jobling and Peterson and others, have applied this method to the treatment of arthritis. Enough cases have been reported to show that acute, sub-acute and chronic arthritis due to the streptococcus and gonococcus and the joints of acute rheumatic fever are in most instances beneficially influenced. Miller and Lusk report over 100 cases with remarkable results. It matters not in what form the protein is injected. A very convenient method is to use any standard vaccine such as typhoid, gonococcus or colon bacillus, although the use of proteose would probably be more scientific on account of its standardization being easier. Following the intravenous injection of 100,000,000 dead typhoid bacilli, or a similar dose of other protein, there is a chill, rise in temperature averaging from 102 to 104 and leukocytosis of 20,000 to 50,000. The fever and leukocytosis last from a few hours to five days as occurred in one of my own cases. In favorable cases the joints at once become painless and the swelling and redness subside. If the symptoms do not completely subside with one injection, it may be repeated daily, every second day or at intervals of four or five days, depending on the particular case.

The limited experience of the writer in the use of typhoid vaccine in gonorrheal arthritis has been very gratifying. The results have been even more striking than those reported by Miller and Lusk.

The *modus operandi* of this method of treatment is still not very well understood. The high fever seems to play a part especially in gonorrheal arthritis. Cold has long been known to be detrimental to the recovery of arthritic joints. It has often been observed, probably by all of us, that a gonorrheal urethritis is often improved or cured during the course of some intercurrent infection. I can recall cases of chronic urethritis which disappeared during the short course of a pneumonia. Others have been equally benefited when the patient was suffering with epididymitis and fever. Finger, Gohn and Schlagenhauer were unable to produce a urethritis by the injection of gonococci into the urethra of patients suffering with fever, while they always succeeded when healthy individuals were injected. It is also true that the gonococcus will not grow artificially at a temperature above 102. Therefore, it seems reasonable that the hyperpyrexia alone is a factor in gonorrheal arthritis. This, however, does not explain the beneficial action in arthritis due to the streptococcus which is known to be more resistant to heat.

The phagocytic action of leukocytes would suggest that the hyperleukocytosis always present in these reactions had something to do with fighting the infection. Their value in pyogenic infection is well known. It is possible that diseases with leukopenia like typhoid are benefited by this artificial stimulation of the leukocytes. Besides the fever and leukocytosis, there probably are produced ferments in the blood which act detrimentally to the organisms in the joints. The recognition of this non-specific action has done much to encourage investigation of these cases, especially along the line of therapeusis, and at least one more ray of hope is added to brighten the future of these too often hopeless invalids.

Discussion

Dr. Murdoch Bannister, Ottumwa—The paper is certainly a very scientific one and the field has been covered quite completely. During the past two years I have had a number of cases of chronic arthritis and have tried out the specific vaccine therapy quite thoroughly. While I have had two instances in which the patients recovered under specific vaccine, most of them have not done so. I have come to the conclusion that in the majority of cases specific vaccines have only a temporary effect. At first I was greatly pleased with the effect of auto-

genous vaccines, but eventually was disappointed. Also vaccines have been made from tonsils which have been removed and cultures very carefully taken from the base of the tonsil, and even in some instances from the apical end of an infected tooth. In every case I was careful to take the culture in such a way that if focal infection existed I was getting the culture from the proper source. I believe the whole thing simmers down to the fact that there is some benefit in creating a fever, for fever seems to help. Outside of that I do not believe we get much benefit from vaccines. There is an enormous amount of good to be obtained from removal of the focus of infection before the joint lesions have become chronic. I have had several cases of beginning arthritis deformans caused by infection coming from the roots of filled teeth in which the teeth have been promptly removed upon determination of the cause of the trouble and before the joints have been concurrently involved, with absolute recovery following. I believe that the fault in treating our beginning cases of arthritis deformans lies in the fact that we have not removed the primary focus of infection soon enough. I have a great deal of faith in the ultimate efficacy of nature as a healing agent, aided by adequate hygienic measures and good food, if only we remove the focus of infection soon enough. The fact is that these cases are frequently treated with salicylates and other pain-reducing medicines which also reduce the vitality for many weeks or often for many months before the focal infection is discovered, and when it is discovered, we no longer have a focal infection, but an infection consisting of multiple foci, reducing the vitality of the patient and causing long suffering. With salicylates we fail to secure good results, and I am fully satisfied that vaccine therapy has not proven as beneficial as a few years ago we believed it would be.

Dr. Granville N. Ryan, Des Moines—I wish to take this opportunity to commend Dr. Rendleman upon this excellent paper. He has covered the subject so well that I can hardly see where I can put a wedge in. Our experience in using the different proteins in rheumatism such as the dead typhoid bacilli, has been fairly satisfactory, in the main. Our dosage depends upon the local reaction, increasing the dosage gradually. In speaking of the removal of focal infection I desire to say that we do not get the best results by using too heroic measures. For instance if we have general infection in the maxilla, either superior or inferior, or both, we find that our process of vaccination can be carried out much better by removal of a few teeth at a time. The antiphylactic effect would be altogether too severe if all of the teeth are removed at once. It is not common for the patient to have a severe articular rheumatism following the removal of teeth when a few are removed at one sitting. This observation was carefully made and given to the medical profession by Professor Hartsel of Minneapolis, one of the leading oral surgeons of this country. In

treating acute rheumatism it is well to remember that the salicylates must be given in large doses. We must force them and get a physiological effect if we desire quick results. It has been our observation that complications of the heart, even in the very young, can frequently be aborted, especially in articular rheumatism, if preventative measures are instituted.

Dr. W. E. Scott, Adel—About two years ago I had a patient who had had severe trouble with the knee and ankle joints. Upon examination I found that the teeth were in very bad condition, I believe I never saw teeth and gums in a worse condition than in this patient. I administered calomel and salicylates and supportive treatment, and also gave some vaccines. In addition I advised the patient to have the teeth attended to by her dentist when she got well, and I painted the gums with iodine. The patient recovered, and I heard nothing further from her until a short time ago. I had supposed that the teeth had been removed or treated and that the focal infection had been taken care of. I was called this time to treat injuries resulting from an accident, and on inquiry found that the patient had had no rheumatism since I treated her two years before. I said to the patient, "I suppose you have had the teeth attended to." She replied, "No, I have never had anything done to the teeth." She had made a perfect recovery, the family believing the result to be due to vaccines. I had every reason to believe that the condition of the teeth was the cause of the rheumatism in this case, but the further history showed it was not due to that cause. About two months ago a child was sick in another home with an infection of the throat, nose and lungs, involving also the middle ears. The mother took constant care of this child and three or four weeks afterwards became sick herself with an infection of the tonsils and throat, and coincidentally another child was taken sick with the same infection, undoubtedly contracted from the child. Today the mother and child are sick in bed with rheumatism involving many joints and now are in about the sixth week of the disease. These are undoubtedly cases of ordinary rheumatism, and yet the result of infection from the throat. I am satisfied that this is a very complicated question, that many cases of disturbance of the joints and of the tendons and muscles near the joint are not the result of infection, but of nutritional disturbance, and are amenable to treatment applied to the general condition and also by local treatment. In these cases I have found very good results from the use of the Solar Arc Lamp invented by Kellogg of Battle Creek. In the case of a man who was injured some three months ago and walked with crutches since the injury because of trouble in the knee-joint, after seven treatments with the Solar Arc Lamp he entirely recovered and went to work. I have recently had a patient with trouble in the joints and possibly tendons of the feet, who has for several years had a very severe pyorrhea, but the dentist refused to ex-

tract the teeth because he said they were live teeth, but admitted a severe pyorrhea. I am now treating her feet with the Solar Arc Lamp, giving no medicine whatever, and she has apparently recovered, and moreover recovered without any internal treatment whatever. As I stated, this is a very complicated subject. Some of the cases are due to nutritional disturbances alone without any infection. Some are due to infection, and removal of the foci does or does not cure them. It appears that we have to unlearn a great deal that we have learned about focal infection. I am satisfied that local treatment is of more importance in these troubles than we are apt to think. I cannot understand why treatment should be materially different for disease in the tendons around a joint and some other troubles on the outside of the body that are of an infectious nature; the rays will penetrate the tissues and result in relief as readily as if it were on the outside. I have recently treated a case of sciatic rheumatism with the Solar Arc Lamp, with complete recovery after giving sixteen treatments. This patient had submitted to all sorts of treatment over a period of six or eight weeks, but the light cured him without medicine internally. I am satisfied that electric light, especially that produced by the Solar Arc Lamp, or by the arc light so arranged and focused as to produce a very high degree of heat and imparting also the chemical effect of the light, will in many cases result in relief of these conditions which are local and appear to be due to some systemic trouble, without the administration of any drugs.

Dr. G. E. Decker, Davenport—Just a word about the prevention of acute arthritis following tonsillitis. Dr. Rendleman has called attention to the fact that the streptococcus is of low grade virulence. This is true, otherwise these patients who have a secondary infection would die before they have a chance to succumb to localization in the joints. This must be true or Rosenow's classical experiments of injecting the streptococcus into the blood stream of animals would produce immediate septicemia with death before there could be an opportunity for localization. It is true that this streptococcus has a very low grade of virulence, because many patients have tonsillitis without secondaries. Also there are patients who have mild secondaries, and there are patients who have very acute secondaries manifesting themselves in acute articular rheumatism, so-called, with heart involvement. Years ago Murphy pointed out that many of the secondaries develop about three weeks after the primary infection. This I think we see in many of the secondaries resulting from acute tonsillitis. And it has been my practice to advise all adults, especially, to look for the development of secondary troubles in the joints about three weeks after recovery from tonsillitis. Recently I have seen a number of cases in which the patients have come back reporting that they had this tendon tenderness—tenderness of the tendo Achilles,

tenderness about the hamstring muscles, lameness and soreness in the back, which they probably would not have reported if they had not been warned. Some of these patients will go on to the development of a real secondary arthritis or articular rheumatism, but this may be prevented if they report early enough and are put to bed and their own resistance conserved so that they may throw off the infection, rather than keeping about their affairs and giving the streptococcus a chance to localize secondarily.

Dr. Wayne M. Shirley, Carroll—The theory of focal infection is a beautiful theory, but from the standpoint of the general practitioner, that is, from a working standpoint, there seems to be a broad gap. I was rather disappointed that Dr. Rendleman did not bring out something along that line. The gap is here: How are we to determine the relationship between the different focal infections, and the chronic arthritis? We discover a focal infection, probably in the tonsils, and we may be content to stop with examination of the tonsils and not look farther; but looking farther, we might find another focal infection, which probably has happened in the experience of a great many. How are we to know which focal infection is producing the rheumatism? It seems as though there must be some laboratory method to be worked out in the future, whereby this point may be determined. I would like to have Dr. Rendleman tell us what he knows about that, as I think he is able to do.

Dr. William Jepson, Sioux City—In our work it is as a rule desirable that we have some means of control with a view to ascertaining the accuracy of the conclusions which we draw. In a study of the question of focal infection, the effects of vaccines, and the necessity of removal of the primary focus of infection, I would like to call attention in studying this topic to one pathological lesion which gives us a typical primary infection, the location of which we always know and we generally know where the secondary infection is or may be, and in which the joint lesions are clearly outlined. I refer to the infection of the gonococcus. We realize that this is first in the urethra. We furthermore have learned that in the progress of this disease in the male, the epididymis may be involved, giving a secondary point of infection. And we have all of us noticed a peculiar phenomenon here, namely: As soon as the epididymis becomes involved, the patient presents evidence of fever, a high temperature, due to the absorption of toxins. Then what happens to the primary discharge? It ceases. In other words, the local inflammation terminates, and I am sure that it was for a long time quite a mystery to all of us how this could occur. We realize now, with the knowledge that the temperature is inhibited by the growth of the gonococcus, why this discharge ceases. As soon as the epididymitis has practically been recovered from, or rather as soon as the temperature has dropped, what happens in the large percentage

of cases? It recurs, showing that the introduction into the circulation of toxins, at least as regards this particular germ, does not destroy it. This indicates that we must be careful not to draw conclusions from the early, immediate beneficial effect that there will be lasting results, because if we did, we would assume that the discharge would cease. But that is not true. In the second place, following the epididymitis we may have a gonorrheal arthritis. While we all realize that this is a very inveterate condition as far as recovery is concerned, yet we know fortunately that in a large percentage of the male sex having this disease, removal of the primary focus is not necessary, at least so far such has not been undertaken. I do not want to discredit removal of primary foci of infection which are feeding the circulation; on the other hand I am trying to fix in mind the fact that we must not overlook, as one of the speakers has said, the nutritional changes in and about a secondary site of inflammation, as in and about the joint.

Dr. Frank M. Fuller, Keokuk—I did not expect to take any part in the discussion of this paper, but there have been three elements injected into the discussion that seem to me to have some correlation. One very practical suggestion has been that we do not find early enough the primary or secondary focus of infection. The second query has been, how are we going to determine what are the foci of infection? We hope that there may be developed at some time a laboratory method by which we can find the focus of infection. The third is as to the low grade of virulency of these infecting microorganisms. Now, some one has said that ignorance consists not so much in not knowing, as in knowing so many things that are not true. And I suspect that we are attempting to know about focal infections a great many things that are not true. I have been giving considerable personal thought to this thing along the line of work with children, and it is my fixed belief that most of these conditions of infection are infections of early childhood even though they may not make their manifestations until later in life, with the exception, as Dr. Jepson has said, of the gonorrheal infection, and even then we may have the joints prepared for the gonorrheal infection with the development of it. In the history of every child with rheumatism, and in most cases of rheumatism and endocarditis in child life, we find that in these children the rheumatism is not an acute condition, and when I say "rheumatism" I mean this arthritis; and sometimes without the manifestations of arthritis we find the condition is not acute, but involves the history of the child's entire life. If you will take every single manifestation of an arthritis or of the secondary developments of it—the endocarditis, choreic manifestations, etc.,—in order to get at it you will find that you must make a thorough examination of the history of the case. Now, here comes the question as to how we are going to find a laboratory method. I don't believe we will. We are not

going to find any great finger pointing directly towards the solution of any of our problems in medicine—we have to solve these by the same means that have been employed in the case of the parents. And I believe that if we carefully go into the history, go back to the old-time methods of careful clinical evidence, a careful study of the pathology of our cases, we will in that way in some of these long-time old developed cases be able to locate the primary infection, and possibly by a careful investigation we may be able to locate the first evidence of secondary infection. Now, we men who are in general practice, no matter how we may view that thing, cannot advise our patients when they come to us for treatment of what they call rheumatism, saying, "We want to get rid of the pain,"—we cannot say to them, "Go to the dentist and have all your teeth taken out," "Go to the throat specialist and have your tonsils removed," or, "Go to the surgeon and pay \$300 to get your appendix cleaned up and your gall-bladder cleared out," or, "Go to the genito-urinary man and have him clean out the seminal vessels," and all that. He will say that he doesn't want to do that, that he wants to get rid of the pain. It is our duty to get these foci cleaned up, but practically we cannot always do it. It is an obligation that is placed upon us to so far as we can in a practical way, if we are right on that thing, to get at the foci or the focus of infection, primary or secondary, and try if possible to lay our finger upon the offending part and with some degree of intelligence at least be able to say to the patient, "We believe that here is the source of infection." And I believe that we will get this more certainly by a searching of details, the securing of a complete history of the case, by correlating all the whole life history of the case so far as it is possible to do it, than by any other means practically at our disposal today.

Dr. Rendleman—I wish to thank the members for their discussion. Dr. Bannister and Dr. Becker have properly called attention to getting at these conditions early. Early removal of the focus is worth a great deal more than late removal, and the fact that most of these foci are old explains why it is that their removal is so frequently followed by poor results. I want to impress upon you that you expect too much if you believe that immediate results should follow the removal of foci of infection as we ordinarily get them. The primary focus may be removed, but you will have left a great many secondary foci scattered through the body which require a long time for nature to get rid of. As Dr. Scott mentioned, there is no question but that heat is beneficial in practically all the forms of arthritis that have been discussed here. Dr. Shirley's question has been answered, as well as it can be answered, by Dr. Fuller. The method referred to is an empirical one at best. All we can do is to find as many foci as possible through careful history and examination, remove those foci which we feel are the most probable causes, then wait, watch and pray for results,

hoping that some time we may have some better method of determining the actual cause present. But, as I tried to bring out in the paper, it is jumping at conclusions to assume that a focus and arthritis in the same individual necessarily represent cause and effect. In the majority of cases they probably do not as we find them. Now, there will be a confusion in the terms rheumatism or rheumatic fever and other forms of arthritis, just as long as we are in the dark as to the etiology. We cannot say that rheumatic fever has an etiology different from that of other forms of arthritis. The same streptococcus may cause a chronic arthritis. But at the present time, as far as the classifications are concerned, we will still have to cling to our clinical classification of rheumatic fever, which is distinct.

PRENATAL, NATAL AND POSTNATAL LESIONS OF THE CEREBRUM WITH RESULTANT CONDITIONS*

EDWARD M. WILLIAMS, M.D., Sioux City

Scarcely sufficient attention has been given the diseases of these periods, comparatively little having been written on even the most important of them. The affections of the prenatal period include the various deformities or monstrosities, microcephalus, megalcephalus, anencephalus, etc., a detailed description or even list of which would be of very little practical use. One group however, is of interest, namely, that of the cephaloceles, or protrusions of the meninges with or without brain substance through abnormal cranial openings. The cephaloceles may be divided into the congenital and the acquired, or traumatic. The congenital types are further subdivided by Lyssenkow into exencephaly and cephaloceles. Cases of exencephaly or acrania show a general error of development resulting in a large gap in the cranial vault with the remainder of the skull microcephalic, the brain in such cases extruding in varying degree and the ventricles being distended with fluid. In the ordinary cephaloceles, the opening is usually circumscribed, although the sutures may be widely separated, and the ventricles also distended with fluid, but the skull and brain are otherwise normally developed. Cephaloceles occur most frequently in the occipital and naso-frontal regions, in the former case being either high or low in the occipital region. The largest appear near the fontanels. An important group occurs at the base of the brain, causing tumors in the nose easily mistaken for polypoid growths which

*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1917.

might lead to dangerous operative results if not recognized. The acquired or traumatic cephaloceles are most frequent on the prominent vault of the cranium, particularly in the parietal region. They follow extensive fractures, often cannot be detected until the cephalhematoma subsides, and then can be seen with the general characteristics of the congenital type. The cephaloceles are to be differentiated from the dermoids which are growths found in the same areas and very similar. The dermoids, however, do not contain brain substance, do not pulsate, are not translucent and cannot usually be reduced. They are really a fusion of the dura with the ectodermal tissue. The operative procedures are important in these cases. In the exencephalics, nothing can be done of this nature. In the other forms, however, considerable relief can often be afforded in a condition otherwise usually fatal.

Hydrocephalus is a condition occurring both in the prenatal and postnatal periods. Probably the most frequent cause during the prenatal period is syphilis, cases of such origin having more of the type of an internal hydrocephalus with granulated and over active ependyma. Meningitis, often of the colon bacillus type, also acute infectious processes in the mother with foetal meningeal irritation may be the cause. Here the involvement is of the meninges interfering with the proper cerebrospinal circulation possibly by a closure of the foramina of Magendie, Key and Retzius. Serous meningitis, in its lightest form called meningismus, is often found in the postnatal period. Quite frequently however a serous meningitis following a slight and not recognized infection is first thought of after hydrocephalus develops. The forms of meningitis, encephalitis, different toxic states from fevers, etc., occurring during the postnatal period, do not differ sufficiently from the same affections in early childhood to warrant any detailed description of them. It is interesting however to note that the colon bacillus is an unusually frequent cause of meningitis in both the prenatal and postnatal periods.

Imbecility, unless of some distinct and easily recognized form, cannot be dealt with accurately enough so early in life to attach much importance to it in a paper of this kind.

In the natal period, we have to deal with the most frequent and most important of all the cerebral disorders, that is, intracranial hemorrhage. The natural assumption in these cases of hemorrhage would be a severe delivery, either natural or instrumental. This, however, is not always so, quite a number of instances being recorded where unusually easy and uncomplicated births in

multipara developed intracranial hemorrhage. This occasional occurrence without apparent cause must not be lost sight of, though naturally the trauma of a severe delivery would add materially to the chances of such a condition arising. Little was the first to call attention to intracranial hemorrhages occurring at birth. He demonstrated the presence of difficult labor and especially instrumental delivery in cases subsequently developing spastic paralysis, later known as Little's disease. These children were often "blue babies" so-called, for hours after delivery.

Epilepsy for a long time has been known to occur in later years in children who have had this early history of cyanosis, and it is important to consider this in the prognosis.

Cushing and Keene were among the first to take up the *surgical consideration* of intracranial hemorrhage. The two main divisions of intracranial hemorrhage are based upon their relative position to the tentorium, namely supratentorial and infratentorial. The former, or supratentorial, are more to be expected in breech presentations, the infra type only in the vertex position. According to Cushing, the supratentorial hemorrhages originate from the large veins, leaving the upper part of the convexity of the brain and running a short surface course to the lacunæ laterales of the superior longitudinal sinus. They are due to a tear in these vessels by the overlapping of the parietal bones along the suture line and the same mechanism probably has a great deal to do with the tearing of the vessels of the falx cerebri and falx cerebelli, which so often occurs. Traumatic hemorrhages in the new born as well as in early childhood are most often subdural, owing probably to the dura being so firmly adherent to the skull. This is true even in cases of severe fracture. The hemorrhages may be confined to the meshes of the pia arachnoid and well circumscribed, or directly beneath the dura and either localized or diffuse, bilateral or unilateral, when bilateral being the cause of a later spastic diplegia. Kredel reported a case due to passive congestion and mentions the danger of hemorrhages occurring in cyanotic infants.

The supra and infratentorial hemorrhages show as a rule decidedly different symptomatology. In the supratentorial group the *signs of intracranial pressure* are shown by a bulging of the fontanel, with a lack of pulsation, enlargement of the veins of the scalp and eyelids, local signs of irritation of the cortex, paralysis or irritation of the facial, oculo-motor and accessorius nerves and of the extremities. The children are restless and even may scream from the pain caused by the

stretched dura. There are also signs of irritation of the cardiac and respiratory centers. In the infratentorial group there are unusually severe involvement of the respiratory and cardiac centers, slow pulse, stertorous, or at least labored breathing, cyanosis, increase in blood-pressure, priapism and wrinkling of the skin of the scrotum. The fontanels do not bulge in these cases and the patient may be unusually quiet, even somnolent. These symptoms do not always occur immediately after birth, days and even weeks elapsing sometimes before a hemorrhage develops sufficiently to be recognized. The percentage of cases of this character found first at autopsy show the great frequency of previously unsuspected hemorrhage. Thus Archibald in seventy-four autopsies of infants either still born or dying within the first few days, found intracranial hemorrhages in thirty-two, considerably extensive in nineteen of these and in five others there were extradural hemorrhages and in only two or three was the blood effused through the brain substance. The percentage of occurrence as found at autopsies by different writers is given from two to thirty or forty.

A very interesting case of recurrent hemorrhage during the postnatal period (child of nineteen months) has been reported by Wright, where a lenticulo-thalamic hemorrhage occurred, improved and later recurred several times. A hemorrhagic diathesis probably was at the foundation of this case.

Where an infratentorial hemorrhage is at all suspected, a lumbar puncture should always be performed and the presence of bloody fluid will confirm the diagnosis. This procedure repeated for several days has also cured a number of such cases and in fact is about the only treatment for hemorrhage in this location, as the field is ordinarily too dangerous a one for operation.

A puncture in the lateral corner of the large fontanel is easily made and will often show the presence of a suspected supratentorial hemorrhage. If such a condition exists, an operation is called for and the condition of the child should not deter one from doing it immediately as these patients stand shock remarkably well. By operative procedure is meant simply a drainage and not a removal of bone—this latter may be necessary however unless the case is attended to before the clotting and organization has taken place. If the condition is allowed to remain unoperated, even though apparently slightly improving, there is great danger of a later paralysis or epilepsy and operations later than the first few weeks are practically never successful.

Discussion

Dr. D. N. Loose, Maquoketa—In this day when "Babe is King," when the laity as well as the profession are making strenuous efforts for the conservation of the child, a paper of this kind is very fitting. The subject is so large, however, that it cannot receive the amount of discussion and consideration that its importance merits. The prenatal affections, the varied forms of monstrosities, the author rightly passes over as of little practical value to us because hopeless. Cephaloceles are of more importance because some types can be benefited by treatment. Dr. Williams mentions an important group occurring at the base of the brain, causing tumors in the nose which are easily mistaken for polypoid growth. This is worth remembering. I imagine comparatively few of us would recognize a cephalocele in the nasal cavity. Traumatic cephaloceles, most frequent on the prominent vault of the cranium, may be benefited by treatment. Hydrocephalus the author divides into prenatal and postnatal. Syphilis undoubtedly is the most frequent cause of the prenatal form, although alcoholism is certainly also a frequent cause. Meningitis, often of the colon bacillus type, also acute infectious processes in the mother, may be the cause. Here the involvement is of the meninges, interfering with the proper cerebrospinal circulation, possibly by the closure of the foramen of Magendie. The author states that meningitis in the fetus may be caused by an acute infectious process in the mother. He also emphasizes the statement that the colon bacillus is an unusually frequent cause of meningitis in both pre and postnatal periods. The only statistics I have found bearing on this subject are those of Wolf, quoted by Simon. In 174 cases of purulent meningitis, Wolf found the colon bacillus in 2.87 per cent. I hope the discussion will enlighten us as to whether or no we have enough evidence to accept the statement that the colon bacillus is an unusually frequent cause of meningitis in infants. The frequency of cerebral symptoms in gastrointestinal cases would lead us to suspect the colon bacillus as a factor. Meningismus, Dr. Williams says, is serous meningitis in its lightest form, and he states that it is often found in the postnatal period. Quite frequently a serous meningitis following a slight and not recognized infection, is first thought of after hydrocephalus develops. Cabot says that between meningitis and meningismus, that is, between cerebral congestion and actual exudation of the pus formation, we have no certain way of distinguishing. However, I do not think that many of us believe so serious a sequel as hydrocephalus can follow a cerebral congestion without an exudate. In view of the appalling problem that idiocy and imbecility is to the state, it is to be regretted that the author did not tell us something about this type of cerebral lesions. The most frequent and most important of all the cerebral disorders in the natal period is intracranial hemorrhage. As to frequency, Dr. Williams quotes Archibald, who,

in seventy-four autopsies on infants either stillborn or dying within a few days, found thirty-two cases of intracranial hemorrhage, more than 43 per cent. Intracranial hemorrhage occurring at birth does not necessarily follow a severe delivery, but has been known to follow unusually easy births in multipara. **Little's Disease**—The author classifies intracranial hemorrhages as supra-tentorial and infra-tentorial. The supra-tentorial cases are more to be expected in breech presentations, the infra only in vertex position. The practical point in this part of the paper is that in all suspected cases of the infra type, lumbar puncture makes the diagnosis and has cured some cases. In the supra cases puncture in the lateral corner of the large fontanel is easily made and will confirm the diagnosis.

President Herrick—While possibly not bearing on the paper, I would like to hear a word from some one on prevention of these conditions, especially the hemorrhagic trouble. Dr. Fuller, Chairman of the Section on Medicine, is very much interested in this subject, and I am going to ask him to discuss the paper.

Dr. Frank M. Fuller, Keokuk—This is a problem that is of immense importance to all of us. We say so often that prophylaxis is the basis of treatment today, and we keep saying it so much that it gets to mean almost nothing to us in our practical work. And yet this is a phase of practice in which prophylaxis is probably one of the greatest factors in treatment. There is often too little care given to the delivery of children, too much haste, too little intelligent direction of the passenger, too little careful observation of the case after it is born, leaving so many times these cases of natal influences to grow up with what the parents frequently consider a curse of God upon them. So many of these cases develop the idiocies which fill our institutions, so many of them develop the forms of paralytic deformities that incapacitate the child for taking his proper place in life. And so I thought we ought to have some discussion of this subject on the floor, more to impress upon us all the necessity for careful, intensive study of the problems that are presented at the time of the birth and before and after birth.

Dr. L. W. Littig, Davenport—I want to endorse everything that was said by the essayist and Dr. Fuller especially, and simply wish to repeat a few words that I once heard from Dr. Gowers of London. He said: "Remember, gentlemen, that these hemorrhages are due not to the application of the forceps, but to the conditions pre-existing which made the application of the forceps necessary." I bring this out simply because I think it would be unfortunate for any man in the practice of medicine to suggest that this deplorable condition was due to improper treatment on the part of a practitioner. I question whether or not much can be done to prevent hemorrhages. For instance, at one time I did some obstetric work, and I might take pride in say-

ing that I managed my cases so skillfully that I had none of these troubles. But it never occurred to me to attribute my good fortune to any skill on my part, it just happened so. These cases are not uncommon, and they are not due to "application of the forceps, but to the conditions pre-existing which made the application of the forceps necessary."

President Herrick—I would like to ask Dr. Witte if, in dealing with mental troubles later in life, he can trace them to any of the conditions discussed in this paper.

Dr. Max E. Witte, Clarinda—I am unfortunately in a position to see occasionally, not frequently but now and then, the end results of troubles that have taken place at birth and before. Most of these people, however, do not come to the hospital for the insane but they eventually find their place at the institution for the feeble-minded. These feeble-minded and defective children are the resultants of these early injuries which check brain growth and cause a lack of development of the brain as a whole. And the imbecility, the mental feebleness, is only another expression with the paralysis or other defect of the brain hurt playing such a disastrous role in the life of the individual. These early injuries also often cause epilepsy which still further reduces and lowers mental growth and development. Of course, when these cases come to the state hospital, the time for doing anything worth while is past. I agree fully with what Dr. Littig said—that very little can be done.

Dr. Williams—In the subject assigned to me the field was entirely too large to present in a short paper, and in order to cover as much as possible I presented what I considered most important. Referring to the remarks made by Dr. Loose regarding meningismus, what I have lately accepted, and most neurologists have accepted, is that serous meningitis and meningismus are the same. It may possibly be an abortive form of meningitis in which the destructive germs which have found their way into the spinal fluid have not been able to develop sufficiently to form a purulent meningitis, but an irritative form in which there is an increase in fluid. The essential symptom is a great increase in spinal fluid. I have seen marvelous results in cases in which lumbar puncture was performed. As to the condition being frequently due to the colon bacillus, that is not a thing that I have had in my own experience. Naturally, in doing neurological work, I do not come in contact with such conditions as often a pediatricist does. I took the statistics quoted from a couple of prominent men who mentioned the colon bacillus type as unusually frequent. As to prevention of hemorrhage, Dr. Loose has emphasized this point, and I tried to emphasize in my paper the fact that it was not necessarily caused by forceps by saying that cases occur even in a multipara where there has been practically no interference with labor whatever.

TUBERCULOSIS OF THE LARYNX

ROBERT M. LAPSLEY, M.D., F.A.C.S., Keokuk

Tuberculosis of the larynx has been described to some extent by ancient writers as far back as Hippocrates—(460-370 B.C.) who described tuberculosis of the upper air passages.

Various other writers mention and describe lesions of the upper air passages that were no doubt tuberculosis, including Galen, (131-201 A. D.) the second old master in medicine. During the later centuries, knowledge of the subject increased, and of course all knowledge of laryngeal disease was greatly increased when the laryngoscope came into use about sixty years ago. The prognosis of tuberculosis of the larynx has always been extremely bad, but some good results are now reported, although the per cent. of mortality is still very high.

Tuberculosis of the larynx is an inflammatory condition of the mucous membrane in which newly formed cells containing tubercle bacilli are found which frequently break down and form ulcers. The disease may involve the perichondrium and cartilage, with a resultant necrosis and caries.

The infection may occur from the bacilli-laden sputum, or by the way of the blood vessels or lymphatics, and is practically always secondary to pulmonary tuberculosis. A few cases of primary tuberculosis have been reported, but if only a clinical report is made, it may be inaccurate. It is more common in males than females. The per cent. of pulmonary tuberculosis in which the larynx is involved, differs according to different authors. It is not very common in children, probably because they die more promptly from tuberculosis, and before the larynx is involved.

Working in bad air, and especially if dust or irritating substances are present, predisposes to tuberculosis. Probably mouth breathing makes it much more likely to develop.

Thickening of the mucous membrane and infiltrations form sometimes superficial, and sometimes deep, and are likely to break down in ulcerative condition, sometimes involving the perichondrium or cartilages. At times the vocal cords show ulceration, and may be entirely destroyed.

Cases occur with polypoid excrescences of the mucous membrane.

Early diagnosis is the most valuable thing in this disease, before the pronounced pathological changes have taken place.

Hoarseness is one of the early indications that the tubercular process is extending to the larynx. Constant clearing of the throat and cough are suggestive symptoms.

Most writers consider a thickening in the interarytenoid region the most characteristic early sign of tuberculosis of the larynx. Should this be found, even where tuberculosis of the lungs has not been suspected, tests should be made to confirm the diagnosis. Some authors attach great importance to a pallor of the mucous membrane. Levy regards excessive sensitiveness and irritability of the pharynx an early symptom.

Tubercular laryngitis has to be differentiated from catarrhal laryngitis, pachyderma, syphilis, carcinoma, paralysis, rheumatic arthritis, lupus, scleroma, and aphthous ulcers. Even tubercular patients may have a simple catarrhal laryngitis.

One of the most persistent symptoms of the presence of tuberculosis is pain. It may be of a very severe and lancinating character, and so distressing as to prevent the patient from swallowing, thus adding to his weakness.

In syphilis there is very little pain, while in malignant disease, pain is constant, and is absent in most other laryngeal affections, except rheumatic trouble.

The slow process of ulceration, the great edema of the arytenoids, pale condition of the mucous membrane, previous impairment of the general health, with indication of pulmonary complication, all point to tuberculosis. Should tubercle bacilli also be found, the diagnosis is practically completed.

In doubtful cases the Wassermann test, with past history, would help to clear up syphilis, but the patient might have both diseases. The diagnosis is difficult at times, and while a positive Wassermann means a good deal, the negative does not exclude syphilis, and energetic anti-syphilitic treatment may need to be tried, to absolutely exclude syphilis.

J. N. McKenzie thought aphthous ulcers, occurring in the larynx, may be due to streptococci in the sputum, affecting the inner surface of the mucosa and resulting in ulceration, and perhaps eventually becoming infected with tubercle bacilli.

Tuberculin may be used as an aid to diagnosis. The patient's temperature is taken every four hours for three days previous to the administration of the tuberculin, and again after the injection. There is a decided rise in the temperature if tuberculosis exists, and an increase in the infiltration of the larynx, which may even amount to an edema.

Prognosis—Formerly the diagnosis of tuberculosis of the larynx meant an absolutely unfavorable prognosis, but owing to improved methods in the treatment, there is a better chance now, as in other tubercular troubles, but, in any event, the trouble is a very serious one, and the prognosis is not very good yet. The prognosis is especially bad when it occurs in pregnancy. The prognosis, as regards the voice, is of great importance, as well as regards life, as the loss of much vocal power is of the greatest annoyance and cause of embarrassment to the patient. It is likely to be improved with improvement in the other symptoms.

The treatment of tuberculosis of the larynx takes into consideration local medical and surgical treatment, general treatment and hygiene. Rest of the voice is useful, and has been used in practice to some extent since 1838.

Medical treatment consists of treatment with a view to destroying the tubercle bacilli, and symptomatic treatment for the relief of pain, cough, etc.

Hinman has used scarlet red in 10 per cent. dye in equal parts of sesame oil and vaseline, with reported good results.

Pfannenstill treats laryngeal tuberculosis with iodide of sodium internally, and ozone inhalation, a chemical action occurs, freeing iodine. He reported a number of cures.

Trichloroacetic acid has been used, directly applied to the ulcers.

Orthoform locally is sometimes quite a relief to pain. Inhalations of compound tincture of benzoin eucalyptol or creosote sometimes help to ease the pain.

The application of 2 per cent. formalin to the cocaineized larynx is reported as useful.

Röntgen rays and other light rays have been used by various authorities with varying results.

Alcohol is injected in the superior laryngeal nerve for relief of pain.

Opinion differs as to the value of tuberculin injections, and, if used, it should be used in sanatorium treatment rather than in ordinary practice.

Surgical Treatment—This may be the removal of the diseased part by means of the double curette, or forceps, galvano-cautery, tracheotomy, or external operations.

Lockard removes the epiglottis entirely, and states that pain ceased in 80 per cent. of the cases that were operated on.

Moeller advises the removal of the epiglottis. (1) When the tuberculous process is entirely in the epiglottis, and where the physical strength

of the patient will permit. (2) When dysphagia without reference to the remainder of the larynx or the lungs. (3) In tuberculous affections of the epiglottis, even if no dysphagia is present, so long as the lungs are free from disease, or are only slightly affected.

The use of the cautery and of curettes, and cutting forceps has been extensively tried, with varying results.

Tracheotomy may be required for dyspnea. Briefly this includes most of the methods of local treatment.

The general treatment is of the greatest importance, fresh air, sunlight, nutritious digestible food, and care not to overtax the strength, with what medical treatment the individual cases may require.

With painstaking care better results are obtained in tubercular troubles than formerly, and it would seem very desirable to have all patients treated by some kind of sanatorium treatment.

The treatment of tuberculosis is not yet successful enough, but the one great lesson to be learned is the carrying out of the best means of prevention. We should all take a greater interest in the isolation of cases and the prevention of tuberculosis, as there is where the most brilliant results are to be obtained. The time and money spent to prevent trouble is much better than that in the cure of it, and tuberculosis offers one of the most brilliant fields in this direction.

Discussion

Dr. L. W. Dean, Iowa City—I was very much interested in many things which Doctor Lapsley has just told us. Two or three are particularly interesting to me because they are points that I have never been able to satisfactorily decide for myself. What I have to say are conclusions that I have come to after giving the matter some attention. As to the administration of tuberculin: in our service we do not use tuberculin in laryngeal tuberculosis. My understanding is that Doctor Scarborough does not approve of the use of tuberculin unless he has the lungs perfectly quiescent, because he feels that it would cause more harm than good. The administration of tuberculin is to me a very interesting problem, because while in laryngeal tuberculosis our patients do very nicely without the use of tuberculin, in ocular tuberculosis we find it almost impossible to get a good result without the tuberculin therapy. We have recently had a case of ocular tuberculosis, with tuberculosis of the hip and the knee; the latter being a very active process, and counterindicating the use of tuberculin. Because of the knee it was several months before we could use the tuberculin, and during this time the ocular trouble did not improve. In short, it became worse. When the condi-

tion of the joint became such that the use of tuberculin was allowable, with its administration we secured a progressive improvement in the ocular trouble, and eventually the child had a very fine result. To me the problem of handling the cases of chronic ocular tuberculosis in the presence of an acute tubercular process in some other part of the body is an exceedingly difficult one. The question of diagnosis of laryngeal tuberculosis is also an exceedingly interesting one. If you have under your observation two hundred patients with pulmonary tuberculosis, among them will be a large number of cases of acute laryngitis, and these cases come under your observation as a laryngologist. The patients come complaining of hoarseness and a cough, and many of them on examination will reveal what is apparently an ordinary acute inflammation of the larynx, with the vocal cords thickened, and an increase of secretion. I fail to see how anyone can make a diagnosis at the first examination. We have this problem presented to us almost every week, and we do not make a diagnosis, we simply say we have a case of acute laryngitis in the presence of a pulmonary tuberculosis; that the patient must be kept quiet and watched for several weeks before a positive diagnosis can be made. Now, if this larynx clears up in ten to fourteen days with routine treatment, it is certainly not tubercular. A case of simple laryngitis in a tubercular patient will sometimes hold on for five or six weeks and then disappear. If it does not clear up at the end of six or eight weeks, we are reasonably safe in assuming that it is tubercular. If, during this time we find there is any evidence of inflammation of the arytenoid joint, as evidenced by the interference with the movement of the cord, or if a deep infiltration appears, we are safe in saying that it is tubercular. We could remove a piece from the larynx and with a microscopical examination make a diagnosis. We have not attempted such a procedure because of the inadvisability of making an open wound in a structure that is filled with secretions loaded with tubercular organisms. In patients with pulmonary tuberculosis, we must always be on the lookout for syphilitic larynx. In our service, every patient with a larynx that was of a dark red color instead of being pale or pinkish, has proven to be a case of syphilitic laryngitis in the presence of a pulmonary tuberculosis. During the last year we have had a very interesting experience in having produced in the larynx, an implantation cyst. One of our cases of laryngeal tuberculosis was punched, curetted and cauterized until she became apparently perfectly well. She returned a few weeks later with a swelling in the interarytenoid space. There was no other evidence of tuberculosis of the larynx, there was no inflammation, her lungs were doing well and were quiescent. Doctor Scarborough said that he could not understand this recurrence of laryngeal trouble in a patient who was otherwise apparently well. We removed a piece of this growth and sent it to the laboratory of Doctor Albert without at the

time sending a history of the case; he returned the diagnosis of implantation cyst. When I told him the history of the case, then his explanation of how the cyst was produced was perfectly clear. During our operative procedure, we had transplanted some cells into the tissues of the larynx, and they had developed and produced this cyst, which was not tubercular. It, however, caused a swelling in the interarytenoid space which in a way simulated a chronic tubercular process. With curettage following the punch, the trouble disappeared and the larynx is still apparently well.

WAR WORK OF AMERICAN MEDICAL WOMEN*

ELIZA M. MOSHER, M.D., New York

The second annual meeting of the Medical Women's National Association, Dr. Bertha Van Hoosen of Chicago, president, was held in New York City, June, 1917. In view of the pressing need of physicians and surgeons in the war zone and in the devastated districts of Europe, a War Service Committee was appointed by the association to deal with the situation. This body created an executive committee with defined powers, of which Dr. Rosaline Slaughter Morton was unanimously elected chairman. Dr. Morton's selection for this post was a wise one. The Serbian government had bestowed upon her a decoration for her service in that country. In France special privileges had been given her to inspect and study the French hospitals, and after returning home from foreign duty she has still kept in close touch with the work.

Mr. Leo Schlesinger, of New York City, placed at the disposal of the committee a suite of rooms in his office building, 637 Madison avenue, admirably suited to its purpose, and there early in June the committee was installed and intensive work began. Before the committee was installed and intensive work began, the committee had completed its organization, Dr. Franklin Martin, Chairman of the General Medical Board of Washington, asked for an outline of its plan of work. This outline which Dr. Morton presented in person, received the unanimous approval of the board and Dr. Morton was appointed a member of it and chairman of a committee of nine women physicians from different parts of the country, who were selected from a list of twelve submitted to Dr. Martin.

This committee of women physicians of the

*A resume of the first quarterly report of the Chairman of the Women's Hospital Committee to the Medical Women's National Association.

general medical board, may be regarded in the light of a congressional committee, its constituency being the women physicians of the United States. If the latter wish to have force and efficiency, organization is necessary. This committee of nine members is not permitted to increase the membership of the general medical board; obviously, therefore, it could not encompass the extensive work now going forward under the American Women's Hospitals, which it is hoped, the general co-operation of women throughout the country will make even more extensive and thorough, and consequently of more value to the general board. We are now in a position to supply the data necessary to supplement that on the cards sent out from Washington, and on file there.

Copies of the outline prepared for the general medical board were laid before Col. J. R. Kean, Director of the Department of Military Relief of the American Red Cross and the Surgeon General of the Army, General Gorgas. They both expressed the greatest interest in and approval of the work. General Gorgas said that if the war continued for any length of time, the services of every woman doctor in the country would doubtless eventually be needed.

To anticipate this need, the plan of work, with registration blanks, was mailed to 5000 medical women, asking them to enroll. On October 6, at the time the first quarterly report of the American Women's Hospitals was issued, 115 women had registered as follows:

1. Women's units, 150. 2. Women's units to Allies armies, 110. 3. Service in established units, 103. 4. Maternity units to devastated regions, 84. 5. Village practice, 25. 6. For service in any of the above five, without choice 110. The registration blanks are still coming in and it is hoped that every woman physician in the country will record herself as being willing to serve her country in its hour of need.

Dr. Esther Lovejoy of Portland, Oregon, and Dr. Alice Barlow, of Winnetka, Illinois, are now making a study of civilian conditions for our war service committee, and the following doctors, members of the American Women's Hospitals, have been sent by the Red Cross to the other side.

Esther L. Blair, M.D., Pittsburg, Pa.

Women's Medical College of Pa.

Dorothy Child, M.D.,

Johns Hopkins University.

Florence Child, M.D.,

Johns Hopkins University.

Edith Lyon Heard, M.D.,

Women's Medical College, Pa.

Mary Nevin, M.D.

Esther E. Parker, M.D.,

Cornell University.

Helen L. H. Woodroffe, M.D.,

Denver Homeopathic, 1900.

Marion C. Stevens, D.D.S.,

Tufts College.

Ida R. Shields, M.D.,

University of London, England.

Laura C. Wiggin,

Anæsthetist.

In September the Red Cross asked for two units of women doctors to go immediately to Roumania. Their departure has been delayed for diplomatic reasons, incident to the situation in Russia. There are also in readiness forty doctors, who will be called within the next thirty days, and units have been arranged which can be mobilized within a few hours.

The women doctors present an attractive appearance in their uniforms, which were planned by Dr. Morton at the request of the Red Cross. The lines of the Red Cross uniform for men are followed, and the uniform is both smart and attractive.

The American Women's Hospitals' flag and proper insignia designed by Miss Brenda Putnam, a niece of that brilliant pioneer among women physicians, the late Mary Putnam Jacobi, has been adopted. The flag is blue and white; the drooping wings, the symbols of the American Women's Hospitals, are grouped around a shield bearing the name "American Women's Hospitals." The pins of bronze are sheltering wings, denoting protection and comfort, with the emblem of the various branches of the service placed upon them.

Open meetings of the American Women's Hospitals were held every Thursday afternoon throughout the past summer and will be continued indefinitely. These meetings presided over by Dr. Morton, or in her absence by Dr. Emily Dunning Barringer, the vice chairman, have been of great interest, not only to the members of the organization, but to the general public.

Inspiring speeches by friends of the organization, and officers, doctors and nurses returned from the front, have been a feature of these meetings. One of the most interesting of these was the address made by M. Liebert, the French Consul General at New York.

An important branch of the American Women's Hospitals is that of the A. V. A. (American Volunteer Aid). This body was formed after the British V. A. D. (Volunteer Aid Department) and is in a thriving condition.

Those wishing to join are given forms on which must be entered all data concerning non-medical women who wish to be laboratory assistants, ambulance drivers, stretcher-bearers, interpreters, dieticians, clerks, *et cet.* A number will be needed in the units already in readiness. These lay assistants have a distinctive uniform for both identification and protection.

The surgeon general of the army has expressed his willingness to place in base hospitals, as contract surgeons, women physicians as anæsthetists, radiographers, and laboratory workers, at a salary to be arranged by contract, and not to exceed \$1,800 per year. The need for laboratory workers is so great that the American Women's Hospitals have opened courses in this branch at the Women's Medical College of Pennsylvania; Women's Hospital, New York; and at the Research Laboratories of the New York City Board of Health. In them courses will be given to college women who have already studied chemistry and biology, in order to fit them, at a nominal expense, to become laboratory technicians, and to assist our physicians.

Any physician connected with laboratories which offer such courses in the different parts of the United States, and women wishing to apply for this training, are requested to take up the matter immediately with the National Chairman of Laboratory work, Dr. Martha Wollstein, No. 1 West 81st street, New York City.

The Chairman of the Committee on Army Hospitals in the Home Zone, both for acute and convalescent cases, is Dr. Mary Almira Smith, 33 Newbury street, Boston, Mass. The American Women's Hospitals have in Boston two hospitals in readiness for convalescent cases and several others near New York. Its Women's Army General Hospital of New York, which has recorded its personnel and equipment in the War Department at Washington, has been told by Surgeon General Gorgas, that it will be notified when this is needed, and that it has the same status as all other army hospitals in the home zone.

The Women's Committee of the General Medical Board has had two meetings, July 29th and September 29th. A registration card was sent to the women physicians of the United States with a view to ascertaining how many would be willing to serve in base hospitals as contract-surgeons, radiographers, laboratory workers and dressers of wounds. These cards are now being filed in Washington for reference in case need arises to place women in base hospitals to release the men for field hospital service.

The following are the regulations regarding

contract practice:

1. Contract-surgeons do not receive pensions except by special act of Congress.

2. The Government pays for transportation, quarters, heat and light, the same as furnished the first lieutenants.

3. There is no additional pay for foreign service; the contract specifies where the service is to be, and the amount to be received for this special service.

4. One thousand eight hundred dollars a year is the maximum, the minimum being whatever agreed to for the particular service to be rendered.

5. The amount is regulated by agreement; the surgeon states his price and the government accepts or rejects; or vice versa.

6. The immediate superiors are commissioned officers of whatever rank in command at the station where the contract-surgeon serves, even although they be only first lieutenants.

The surgeon general's office expressed an interest in knowing how many women wished to become members of the Army Reserve Corps, and a letter was sent by the General Medical Board Committee of Women Physicians to the presidents of medical women's organizations asking an expression of preference for this service, but comparatively few made their offer of war service absolutely contingent upon their becoming officers in the Army Reserve Corps.

It is the intention of the Medical Women's National Association to continue the work of this War Service Committee until the end of the war if the need for it continues to exist.

TETANUS LIGHTED UP BY OPERATION

An interesting case is related in the British Medical Journal for June 30, 1917, of a soldier who received a compound fracture of right radius in France, September, 1916. It is supposed that he received a prophylactic injection of antitetanus serum. The wound healed but the bone did not unite. In April, 1917, or more than two hundred days after receiving the shell wound, an operation for bone grafting was made. Six days later, tetanus developed and the man died in three days. No prophylactic antitetanus serum was injected. It is assumed that anaerobic germs lurked in the depths of the tissues, for shortly after the operation, the wound became very septic and were brought into activity by the trauma of the operation. The records did not show that an immunizing dose of serum had been given although it was assumed that such was the case. The lesson to be derived from this case is that an operation under similar circumstances should be preceded by a prophylactic dose of antitetanus serum.

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa
T. B. THROCKMORTON, Business Manager.....Des Moines, Iowa

Publication Committee

T. B. THROCKMORTON, Secretary.....Des Moines, Iowa
W. L. BIERRING.....Des Moines, Iowa
F. W. PORTERFIELD.....Waterloo, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa
D. H. BOWEN.....Waukon, Iowa
T. E. POWERS.....Clarinda, Iowa

SUBSCRIPTION \$2.00 PER YEAR

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII January 15, 1918 No. 1

THE STANDARDIZATION OF HOSPITALS— THE AMERICAN CLINICAL CONGRESS

The recent convention of the Clinical Congress, The American College of Surgeons, and the State Committees on Hospital Standardization, devoted a period of eight days to strenuous work. The work of these bodies was well co-ordinated, although only a minority were active in all three.

After several years of discussion as to methods of improving hospital conditions, definite steps were taken to put into operation certain plans that have from time to time been considered by committees and discussed in medical societies. It is a recognized fact that hospital work has been much behind the development of medical science; that is to say, medical practice has not kept pace with the progress of science, and that hospital service is a fair index of the state of medical practice in general. This state of facts began to be appreciated by advanced workers something more than ten years ago when a plan was inaugurated to bring the medical schools to a standard commensurate with modern conditions. After ten years, medical schools have come to a state fairly representing advanced medicine. Inasmuch as hospital practice should represent the best in medicine, it follows that the next step is in the direction of bringing the hospital to a standard approaching the standard of teaching and the present state of medical science. The task is no doubt a difficult one and so it was said of the effort to standardize medical schools, but it was accomplished in the face of the most active

opposition. The problem in relation to hospitals is similar and must be approached in substantially the same way with the expectation of opposition of the same kind from those who fear that selfish interests may be jeopardized. It came out in the discussion that war conditions would exercise a vast influence in bringing about better hospital conditions. The immense obligation on the part of the government to provide the best medical and surgical treatment of wounded soldiers in hospitals fully equipped and co-ordinated, will bring to the attention of the best of our young medical men, the difference between the more or less badly managed hospitals and the higher and more efficiently controlled hospitals. Much may be expected from the return of these men to civil practice.

The best working plan to put into operation to begin with appears to be the organization of committees to examine through properly trained agents, the equipment, methods of administration, and case histories of hospitals, making a record of the findings, conferring with boards of managers, pointing out the needs in particular instances and placing a time limit on periods of improvement when another inspection is made. After the preliminary requirements are met, the further requirements will be suggested, finally reaching staff requirements to the extent agreed upon by the committees. In due time, based on these examinations, classifications will be made as A-B-C, etc., hospitals, which will be made public for the information of prospective patients. It is believed that these classifications will have the effect realized in the classification of medical colleges in that public opinion will be more efficacious than legislation.

The five days of intensive clinic work of the Clinical Congress of North America, brought together surgeons from all parts of the country, including as many army surgeons as could be spared from service. Among them was Surgeon General Gorgas, Sir Berkley Moynihan, Colonel T. H. Goodwin, and Colonel C. U. Dercle, the representative from the French Army.

The evenings were devoted to addresses from the most famous surgeons, mostly on War Surgery. The vast experience of Sir Berkley Moynihan on the surgery of war, gave to his various addresses great value. His address on injuries of the chest was generally felt to be the most important contribution ever presented to the medical public on this subject. It has been rare to listen to a medical subject presented by one so perfect a master of English. It was a revelation

to most surgeons that by a resection of a rib, the lobe of a lung could be so completely delivered outside the chest and a foreign body removed with such success to life and to the future of the lung.

The value of the several contributions cannot be over-estimated, and no real surgeon could fail of a glow of pride on listening to these great surgical victories. We all feel a high appreciation of the sacrifice of Major George Crile who secured a brief leave of absence and trusted to the uncertainties of an ocean voyage to be present at this great meeting of surgeons gathered to consider some of the most momentous questions of the time for the welfare of those who are offering their lives in this great world struggle. It was an occasion to dwell upon as long as a memory lasts.

On the evening of Friday, a Convocation of the American College of Surgeons was held at the Congress Hotel. On the stage was a group of the greatest men the world could produce. Major George W. Crile, President of the College, presided. There was Major Franklin Martin, Secretary; Surgeon General W. C. Gorgas; Colonel Goodwin of the British Army, Colonel C. U. Derle of the French Army; Sir Berkley Moynihan of the British Army; Major W. J. Mayo; Admiral Braistead of the Navy; Surgeon General Rupert Blue, Marine Hospital Service; Dr. Cotton of Boston, and others of almost equal distinction; Reverend Father Moulinier of Milwaukee, deeply interested in medical welfare work and in hospitals.

The principle address was delivered by Sir Berkley Moynihan on "England and the Great War." Sir Berkley presented the side of the Allies with great force. He pointed out various phases of the contributions of the allied nations and also of the German nation, showing that many of the claims of the latter nation were based on discoveries made by French, English and American scientists, but utilized by the Germans in material development. The great ability they had shown in utilizing the scientific work of other nations in the industries was entitled to the admiration of the world. Aided by the government patronage and encouragement and control, these people had developed an industrial influence which threatened to dominate the world. Not being satisfied with industrial predominance, they had sought to rule the political world by methods and in a way contrary to the spirit and aspirations of the nations not German. Sir Berkley pointed out the fact now recognized that the

German mind was so filled with the autocratic spirit that they were willing to crush all individual aspirations and lay the world at the feet of German greatness regardless of the hopefulness of nations in working out plans of human freedom adapted to the genius of the people except insofar as might suit the interests and glory of one great over-reaching power. The cruelty of necessity in accomplishing this selfish ambition was dwelt upon, and how essential it was that the liberty loving world should rise in all its might to repel this encroachment on the rights of mankind unwilling to submit to a harsh autocratic master.

At the close of Sir Berkley's masterly address, honorary fellowship was bestowed upon our foreign guests and on the heads of our military and naval service. Then closed the most patriotic and impressive Convocation of the American College of Surgeons. The patriotic demonstrations of the Convocation was most appropriate in view of the fact that one-fourth of the Fellows are in the military service of the country.

It is probably not generally known that the grade and character of medical and surgical service generally accepted by the public, are not good enough for the army and navy service, and that except in a comparatively few instances, a supplementary training is required of surgeons who are liable to hold positions of responsibility and authority. Few perhaps realize how deeply the War Department feels in relation to the medical and surgical services to be given soldiers. When the war is over, the members of the profession who have been satisfied to stay at home, will find themselves handicapped in competition with the men returning to civil practice from intensified war service where only the highest skill and best hospital equipment are acceptable. One has only to examine the great English and French medical journals and the preparation the leading American journals are making to take up the work on the same lines when our great army is in the field.

The members of the American profession who attended the Clinical Congress in Chicago during October, will recall the impression gained from the discussions of the distinguished English surgeons who attended the Congress, and of our own great surgeons, who are familiar with the demands of the hour, Mayo, Crile, Ochsner, McArthur, Bevan and others, and reflect that these great surgical triumphs must be a part of their own work in the near future. It is apparent that the x-ray and bacteriological laboratories are

great factors and are really fundamental, and that a large number of workers are essential. It is extremely gratifying that the medical profession is contributing more than any other class in this war. Notwithstanding the apprehension felt not long since, that there would be a scarcity of medical men, that fear has disappeared by the best men in the profession offering themselves freely. More gratifying still is the appearance of the organized women doctors in the field. They appreciate the fact that the medical profession is the safety factor in the war and in the future when nations come to apprise their assets. While women doctors may not serve in the field, they will be of great service in hospitals in treating and dressing the wounded, but more than all in laboratory service, both bacteriology and x-ray, thus releasing men for other service.

In an editorial note the London Lancet for August 18, 1917, reviews briefly the effect of cigarette smoking on the health of soldiers, particularly on the heart. Under the stress of war it is to be expected that any mental anodyne would be welcome and it is quite possible that such agent might be used to excess. An inquiry at the instance of the British Medical Research Committee seemed to establish the fact that moderate cigarette smoking was harmless, but when carried to excess, caused breathlessness and precordial pain. In relation to cigarette smoking on the condition known as "soldier's heart," it was found smoking did seem to increase the irritability of the heart, but the difference in effect on "soldier's heart" and the normal heart was not great. The deep inhalation of cigarette smoke is to be deprecated for in some cases it lessens the efficiency of the soldier. There should be no attempt made to deprive the soldier of tobacco or cigarettes, but he should be warned against excessive smoking and especially against deep inhalation of cigarette smoke which brings toxic risks.

PROMOTION OF RESERVISTS CALLED TO ACTIVE DUTY

Doubtless many of the officers of the Medical Reserve Corps on active duty at the time war was declared have been surprised and disappointed at not seeing their names included in the lists of reserve medical officers given higher rank.

This omission is not due to failure to recognize their qualifications for such rank, but to rulings which prevent it until ninety days have elapsed since war was declared. It was found that they could not be so promoted without relieving them from ac-

tive duty, which was undesirable from the standpoint of every interest concerned.

The "Military Surgeon" desires to assure these officers that the authorities have every intention to recognize their faithful service and military experience. They fully appreciate it, moreover, that it is to the interest of the government to place them in positions of higher executive duty. As soon as opportunity permits, the action will be taken which all desire, and recognize as not only just to the individual, but for the interests of the service.—(The Journal of the Medical Association of Georgia.)

EVERY DOCTOR, IN THE MEDICAL RESERVE CORPS

What an ideal situation it would be, if every doctor in the United States who is mentally, physically and morally fit, was in this corps.

The time is coming, and in the immediate future, when the Medical Reserve Corps of the Army must be immensely augmented, and so as to enable the surgeon general to have at his command for immediate assignment, as conditions demand, a sufficient number of trained medical officers, let us take the above thought seriously.

We all know, from past history, the conserving value of an efficient medical corps, and this means number, as well as training.

A statement made by one high in authority in the surgeon general's office, "that our fighting forces would be disseminated by sickness and casualties in six months, were it not for an efficient army Medical Corps," clearly emphasizes the importance of every doctor in the United States, meeting the requirements above referred to, accepting a commission in the Medical Reserve Corps of the United States Army.

The struggle in which we are now engaged, and for which we are preparing to take such a prominent part, depends for its success as much upon the medical profession, as it does upon our combatant forces, and while we do not know that any such intention as herein suggested is in the mind of the surgeon general, it would at least give him the necessary corps of medical officers, upon which to draw, and thus serve the best interests of our country, and the best interests of the medical officer serving.

In the various nations engaged in this war, in times of peace, over 6,500,000 die annually from preventable diseases. There have been fewer than 7,000,000 killed in action on all sides since the outbreak of war. Obviously then, all the battles in the interest of humanity and the interests of nations are not fought on the firing line. The perennial warfare waged against the invisible foe is as important—if not more so—than that now waged against those who are threatening the destruction of the very principles of civilization.

We abstract a part of a paper published in the *Lancet* for June 25, 1917, on "Albuminuria in the Trenches" by H. B. F. Dixon, M.B., B.Ch., B.A.O., Dub., Military Cross; Captain, Royal Army Medical Corps.

"In view of the investigations on albuminuria and trench nephritis that are now being carried out in casualty clearing stations and base hospitals, the following figures from the records of a field ambulance may perhaps serve a useful purpose.

"Many patients are treated entirely in a field ambulance; others stay for several days before being sent down the line. In this field ambulance, during the months of December, 1916, and January and February, 1917, the testing of every patient's urine was adopted as a routine procedure. The results obtained are sufficiently interesting to warrant their being placed on record. In the three months under review, all the sick of the division passed through this field ambulance, and the urines of all these patients were tested.

"For the purpose of collecting the urine from large numbers, pickle jars were used, and proved very good substitutes for the specimen glasses of the general hospital. With the resources of a field ambulance the tests were simple. Acidulation and boiling, cold nitric acid were the tests used. No microscope, centrifuge, or other apparatus was available.

"The following are the figures for the three months. The number of urines tested was 4085; the number of urines showing albumin was 858 (21 per cent.), made up as follows:

Showing a cloud of albumin.....	136—(15.9 per cent.)
Showing a trace of albumin.....	596—(69.5 per cent.)
In which the urine was loaded	
with albumin	126—14.7 per cent.)

"An attempt was made to ascertain (1) in what percentage of cases the albumin persisted and for how long; (2) what proportion of cases presented renal symptoms; and (3) the relation of patient's temperature to albumin in the urine.

"The figures for February, 1917, alone are given. The number of cases tested was 1442; the number of cases showing albumin was 310 (21.5 per cent.), made up as follows:

Showing a trace of albumin.....	225—72.6 per cent.)
Showing a cloud of albumin.....	56—18.1 per cent.)
In which the urine was loaded	
with albumin	29— 94.4 per cent.)

"1. In what percentage of cases albumin persisted and for how long? Of these 310 cases, (a) albumin disappeared from the urine in 132 cases (43.5 per cent.), made up as follows:

On the second day in 72 cases.....	54.6 per cent.
On the third day in 30 cases.....	22.7 per cent.
On the fourth day in 12 cases.....	9.1 per cent.
On the fifth day in 13 cases.....	9.9 per cent.
On the sixth day in 2 cases.....	1.5 per cent.
On the seventh day in 3 cases.....	2.3 per cent.

"One hundred of these patients returned to duty, their urine having been clear of albumin for three days. Up to the time of writing (March 25) there have been no readmissions for albuminuria, and although some of them have been readmitted for various diseases, no albumin has been found in their urine.

"None of these patients presented any renal symptoms and only very few any constitutional symptoms. They were mostly cases of inflammatory connective tissue, scabies, impetigo, dental caries, laryngitis, etc.

"What proportion of the cases admitted with albumin in the urine presented renal symptoms? Of the ninety cases evacuated to the base with the diagnosis of albuminuria or nephritis, forty presented no obvious renal symptoms except in some cases a persistent albuminuria which increased from trace to cloudy, although on a milk diet; some cleared up on milk, but relapsed at once on being given meat."

THE CONTINUED RELATION OF THE PHYSICIAN TO THE PATIENT AFTER OPERATION

The Pennsylvania Medical Journal publishes a paper by Dr. E. H. Goodman and John Speese of Philadelphia, on the continued relation of the physician to the patient after the case has been placed in the hands of the surgeon. The authors believe that in the post-operative treatment, the advice and assistance of the internist is of very material benefit to the patient. We find ourselves in hearty accord with this view. We have seen much of the custom of surgeons to lose interest as soon as the patient is returned to his room, or at least as soon as the immediate danger from the operation has passed. An operation should in most cases be regarded as an incident in the treatment and not the absolute and essential fact. Many patients, no doubt, lose much of the benefit of the operation because it is not followed up by the trained and skilled internist. If the surgeon is possessed of the skill of the trained physician and can pursue the treatment as such, he may be able to continue the treatment with the most desirable results, but it so often happens that the operator is not a good physician; that the patient in the end experiences a degree of disappointment in not getting more out of an operation which he has risked so much for.

WAR AFFECTS ORPHANAGE

The Christian Home Orphanage, at Council Bluffs, Iowa, is feeling seriously the effects of the war. The numerous calls for funds for the prosecution of the war, has greatly affected receipts at the Home, and the management finds itself confronted by a debt of six thousand dollars for actual living supplies. An effort is being made to raise this sum

at Thanksgiving. The Home cares for five hundred children annually, and at the present time has more than two hundred and fifty homeless children under its care, and nearly thirty little ones on its waiting list to be admitted as soon as funds and room will permit. The winter season is at hand, when demands on the Home are greatest. If you feel that you can help the work at this time, it will be money invested in a good cause. Address the Christian Home Orphanage, Council Bluffs, Iowa.

Through the co-operation of the medical profession of the United States and Canada it has been possible for this Bureau to collect a large mass of important vital statistics. Our data now embrace the basic facts for millions of persons of both races, men, women, and children. In thousands of cases we have received from physicians full information about causes of death where the statements necessary to classify them accurately were missing or indefinite on the original records received by us. We desire, now that our statistics have been compiled, to put at the disposal of the medical profession such results of our tabulations as may prove helpful in connection with any research work they are doing or contemplating. It is hoped that this activity will further the advancement of scientific medicine and public health research.

Very truly yours,

LOUIS I. DUBLIN, Statistician,
Metropolitan Life Insurance Co.

The Metropolitan Life Insurance Company invites physicians, public health and social workers to make use of its valuable collection of mortality statistics.

These statistics present the principal causes of death among white and colored wage-earners in the United States and Canada. The material covers over ten million individuals for each of the six years, 1911 to 1916. Death rates are available for each race, by sex and by age period.

The company hopes in this way to aid in the study of disease and disability among wage-earners. It desires to stimulate medical investigation and research. By offering these statistics to the medical profession and to public health and social workers, the company expresses also its appreciation of the co-operation which it has received from physicians and others who have replied to inquiries and have given detailed information in thousands of cases. This assistance has helped to make the statistics more accurate and valuable.

All inquiries should be addressed to Statistical Bureau, Metropolitan Life Insurance Company, 1 Madison avenue, New York City.

Memorandum—The problem of reconstruction and reeducation of United States soldiers crippled during the present war.

From Joseph Colt Bloodgood, chairman of Com-

mittee on Preparedness, Southern Medical Association.

To physicians and surgeons in industrial practice.

I have received a large number of answers to the letters sent out dated September 10, 1917. These letters and personal conversation with physicians and surgeons in industrial practice seem to demonstrate that the number of cripples who need reconstruction and reeducation is relatively so small that even in large industries it has not been considered of sufficient importance to develop the problem as will have to be done with the soldiers crippled in this war.

The surgeon general and the department under Major Edgar King is preparing for the proper reconstruction and reeducation of the crippled soldiers, but when this is accomplished, employment of some kind must be found for the soldier on his discharge or the whole scheme fails.

The government naturally must not only depend upon help in the reeducation and reconstruction upon specially trained and qualified medical reserve corps officers, but upon the employers of labor in the great industries of this country, to find a job for which the crippled soldier has been reeducated and reconstructed.

It is my personal opinion that the problem is too large a one for any single industry to solve alone. The industries should combine as the railroads have combined in the settling of this very important war problem.

Although at the present time it is perhaps one of the most difficult problems of the war, it is at the same time a peace problem.

In all the industries there must be many cripples in time of peace, who need reconstruction and reeducation. For this reason, if the employers of labor co-ordinate with the government now for the solution of this problem, they will establish and develop a scheme which can be utilized for the crippled men in industry in time of peace.

There is no doubt that "safety first" has reduced the number of accidents. The improvement of first aid and its instruction and the medical departments of the industries have greatly improved the results, but the question of reeducation, especially for a better job, has not received the same consideration.

Please discuss this among yourselves and with the officers of your company, and offer your combined advice and aid to the surgeon general of the United States Army and Navy.

JOSEPH COLT BLOODGOOD.

U. S. A. SECTION OF COMMITTEE FOR RELIEF FOR BELGIAN PRISONERS IN GERMANY

Dear Mr. Fairchild:

To feed the hungry, to care for the unfortunate, to save from despair those who have been crushed un-

der the burdens of this world, has been throughout the Christian era the great work of the church, a work second only to the teaching of Christianity itself. Blessed indeed is such work when it is done for those whose shortcomings have brought them to poverty and disgrace. How even more sacred is it when done for those who have been reduced to the utmost privation and sorrow through no fault of their own, but through an unselfish and heroic devotion to duty.

Such is the fate of the Belgian prisoners in Germany. Having sacrificed everything they hold dear, having risked life itself in the cause of liberty, they are reduced to abject poverty and the verge of despair from which they can be rescued only by the loving kindness and charity of their brothers in a more fortunate land.

To the churches of America these brave soldiers languishing in bondage, hold out supplicating arms. Will you, out of the abundance which a beneficent providence has bestowed upon you, contribute something toward the alleviation of suffering such as none of you will ever be forced to know?

At the Christmas season, we are anxious to send, in addition to the regular fortnightly food parcels, a Christmas greeting. Five dollars will buy a pair of shoes, five dollars a complete set of underwear and socks—the most practical greeting these men could receive. May we depend upon the churches to send this Christmas greeting, not forgetting the many Belgian prisoners on the verge of starvation because we have not the funds to extend adequately the shipment of food parcels? The enclosed pamphlet gives the details.

Faithfully yours,

JOHN MOFFAT.

IOWA MEDICAL MEN IN THE WAR

To Boston, Mass., for orthopedic instruction, from Camp Greenleaf, Lieut. Garnett S. Felt, New Providence; from Fort Snelling, Lieut. Edward S. Parker, Ida Grove.

To Camp Custer, base hospital, from Fort Benjamin Harrison, Lieut. William H. Betts, Madrid.

To Camp Dodge, Des Moines, Ia., for duty, from Fort Des Moines, Capt. Hans Hansen, Logan.

To Camp Sherman, Chillicothe, Ohio, Eighty-third Division as member of board for examination of command for tuberculosis, from Camp Greenleaf, Lieut. Harry C. Nichols, Carson.

To Camp Upton, Yaphank, L. I., N. Y., for temporary duty, base hospital, Lieut. Harold L. Brereton, Emmetsburg.

To Fort Logan H. Roots, Ark., for duty, from Fort Benjamin Harrison, Lieut. Orson A. Kellogg, Dows.

To Fort Riley, Kan., for instruction, from Camp Dodge, Capt. James J. Daly, Decorah.

To New York City, from Philadelphia, for duty in connection with the physical examining unit, and on

completion to proper station, Major Sugen R. Lewis, Dubuque.

To New York City, Neurological Institute, for intensive training in brain surgery, Capt. Henry A. Gray, Keokuk; from Fort Riley, Lieut. Frederick W. Sallander, Fort Madison; to report to the chief surgeon, aviation section, for temporary duty, and on completion to Garden City, L. I., from Fort Benjamin Harrison, Lieut. Victor E. Bollinger, Mt. Pleasant.

To his home and the inactive list on account of being physically disqualified for active service, from Camp Dodge, Lieut. Robert C. Molison, Marshalltown.

Dr. W. W. Pearson, medical advisor to the governor, announces the following as the personnel of the District Advisory Boards.

Des Moines District

Nine counties are included in the district of which Polk county is a part. The other counties are Boone, Story, Jasper, Marion, Warren, Madison, Dallas and Guthrie. The members of the medical advisory board in this district are all Des Moines physicians as follows: Drs. W. L. Bierring, A. C. Page, E. R. Posner, Eli Grimes, F. A. Ely, T. B. Throckmorton, W. W. Pearson, C. M. Werts, and C. C. Walker.

Burlington, Louisa county; Henry, Lee and Des Moines counties—Drs. W. W. Milligan, E. J. Wehman and C. P. Frantz.

Davenport, Scott county; Clinton, Muscatine and Jackson—Drs. W. H. Rendleman, P. A. Bendixen and G. F. Harkness.

Dubuque, Dubuque county; Allamakee, Winnesaukee, Clayton and Delaware—Drs. J. J. Rowan, M. J. Moes, H. B. Gratiot.

Iowa City, Johnson county; Cedar, Washington and Iowa—Drs. L. W. Littig, Bundy Allen and L. W. Dean.

Cedar Rapids, Linn county; Jones and Benton—Drs. W. Ruml, D. E. Beardsley and F. W. Bailey.

Waterloo, Blackhawk county, Buchanan, Fayette, Bremer, Butler and Grundy—Drs. J. E. Brinkman, J. W. Rowntree and W. B. Small.

Iowa Falls, Hardin county—Drs. J. A. Burgess, W. G. Morton and B. R. Purcell.

Hampton, Franklin county—Drs. A. J. Hobson, H. E. Meyer and A. C. Rhine.

Mason City, Kossuth county; Hancock, Cerro Gordo, Worth and Winnebago—Drs. C. E. Dakin, A. C. Echternacht and F. G. Murphy.

Fort Dodge, Webster county; Hamilton, Wright, Humboldt, Pocahontas and Calhoun—Drs. A. H. McCreight, C. J. Saunders and W. F. Carver.

Spencer, Palo Alto, Clay, Emmett, Dickinson, Osceola and O'Brien—Drs. J. M. Sokol, T. H. Johnston and C. C. Collesler.

Cherokee, Cherokee county and Buena Vista—Drs. Nelson Edgar, C. H. Johnson and R. C. Sebern.

New Hampton, Chickasaw and Howard counties—Drs. N. Schilling, C. N. Freleigh and H. D. Fallows.

Charles City, Floyd and Mitchell counties—Drs. A. F. Kober, R. W. Stober and E. P. Hummel.

Grinnell, Poweshiek county—Drs. O. F. Parish, F. E. Somers and C. W. Lauder.

Oskaloosa, Mahaska and Keokuk counties—Drs. E. M. Williams, John H. Krueger and J. F. Roberts.

Ottumwa, Wapello, Jefferson, Van Buren and Davis counties—Drs. D. C. Brockman, J. F. Herrick and D. E. Graham.

Centerville, Appanoose and Wayne counties—Drs. C. E. Sawyers, C. S. James and W. W. Syp.

Albia, Monroe and Lucas counties—Drs. H. C. Eschbach, R. P. Miller and C. J. Lukens.

Marshalltown, Marshall and Tama counties—Drs. N. Merrill, R. E. Keyser and Edwin Cobb.

Sioux City, Woodbury county, Plymouth, Sioux, Lyon, Ida and Monona—Drs. E. W. Nels, Wm. Jepson and F. E. Franchere.

Council Bluffs, Pottawattamie county, Harrison and Shelby—Drs. H. B. Jennings, V. L. Treynor and F. W. Dean.

Glenwood, Mills and Fremont counties—Drs. Roy Moon, T. B. Lacey and W. M. Plimpton.

Clarinda, Page and Montgomery counties—Drs. Max Witte, A. M. Sherman and R. J. Mathews.

Creston, Union county, Clarke, Decatur, Adams, Taylor and Ringgold—Drs. F. E. Sampson, R. E. Green and H. A. Childs.

Carroll, Carroll county, Crawford, Audubon, Greene and Sac—Drs. L. G. Patty, A. J. Beyer and H. R. Pascoe.

Atlantic, Cass county and Adair county—Drs. C. E. Thompson, W. S. Greenleaf and U. S. Mullins.

Lieut. Col. D. S. Fairchild, Jr., formerly serving as Chief Medical Inspector of the 42nd Division, has been relieved and transferred to a base hospital section of 1600 beds, as the chief surgeon.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Riley, Lieut. Arlo R. Zuercher, Cedar Rapids.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. Edward T. Edgerly, Ottumwa.

To Fort Ontario, N. Y., for duty in his specialty, from St. Elizabeth's Hospital, Washington, D. C., Capt. Richard G. Eaton, Cherokee.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. Howard M. Williamson, Olin.

To Montgomery, Ala., Aviation Mobilization Camp, for duty, from Fort Riley, Lieut. Roscoe D. Taylor, Spencer.

To Pittsburgh, Pa., for instruction, and on completion to Fort McHenry, Md., for duty with United States Army General Hospital No. 2, Capt. John R. Walker, Fort Madison.

To Portland, Ore., for assignment to duty with aero squadrons, from Fort Riley, Lieuts. John E. Stansbury, Cedar Rapids; James H. O'Donoghue, Storm Lake.

To San Antonio, Texas, Kelly Field, for duty, from Fort Benjamin Harrison, Lieut. Donald McElderry, Ottumwa.

To Fort Riley, for instruction, Capt. William M. Wildman, Fort Dodge; Lieuts. Frank H. Caffey, Bradgate; Rollin S. Fillmore, Corinth; Abraham G. Fleischman and George S. Gilpin, Des Moines; John F. Schwertley, Earling; Lonnie A. Coffin, Farmington; Edward M. Thierls, Granville; Walter A. W. Kresensky, Greeley; William W. Weber, Hartford; Millard F. Smith, Little Rock; Merl L. Pindell, Macksburg; Ernest D. Cook, Maquoketa; Joseph C. Barragy, Mason City; Jacob J. Sybenga, Pella; Alvin H. Hendrickson, Sioux City; Edwin E. Wuttke, Sumner; Francis S. Corey, Williams.

To Rockefeller Institute, for instruction, and on completion to Camp Wadsworth, Spartanburg, S. C., Lieut. Meredith B. Murray, Macedonia.

To his home and honorably discharged on account of being physically disqualified for active service, from Fort Riley, Capt. William S. Norton, Muscatine.

Major C. E. Ruth, Des Moines, at the head of the surgical department of the base hospital at Camp Dodge, has been relieved from duty and ordered to proceed to Fort Riley, Kansas, and report to the commanding officer of the medical department there for duty.

Captain W. S. Brown of the medical reserve corps also has been ordered to Fort Riley.

Dr. A. T. Bailey was called from his home in Sioux City to Iowa City for inspection and muster in as he is one of the medical officers of the field hospital recently organized in Iowa City. The officers and men were formally mustered in by Lieut. Col. Ragsdale. This unit is in charge of Major F. L. Love and is supposed to be in a training camp by February or sooner. It consists of six officers and eighty men and is to have full equipment for a 216 bed hospital.

Major Donald McCrea, chief surgeon and Captain John Shuman, chief medical officer Hospital Unit K. (Council Bluffs), are stationed with the Unit at Fort Porter, N. J.

To Fort Riley for instruction from Camp Dodge, Capt. Benjamin C. Dyer, Ames; for instruction Capt. Mark C. Jones, Boone; Alanson M. Pond, Dubuque; Frank C. Rhodes, Sioux City; Lieut. Louis B. Amick, Millersburg.

Col. C. C. McCulloch, M.C., U. S. Army, and Major Fielding H. Garrison, M.R.C., U. S. Army, have been made a board to collect and prepare material for a medical and surgical history of the war.

DR. W. B. LAFORCE AND WIFE WILL BECOME MISSIONARIES IN PEKING

Dr. and Mrs. W. B. LaForce will leave for Peking, China, about February 1, where the former has been appointed a member of the faculty of the American Indemnity College and physician in charge of the college hospital. Also physicians to the faculty and students. The length of their stay in China depends

entirely upon how they like the country. They plan to remain for three years or longer. They go as missionaries.

The American Indemnity College, situated in a prince's palace, outside the northeast wall of Peking, China's capital, is one of the best administered educational institutions in the whole of China, according to Dr. LaForce.

Supplement to list of Iowa physicians who have been recommended by the Surgeon-General for commissions in the Medical Officers' Reserve Corps.

John Harvey McCall, 1st Lieut., Allerton.
 Ben Tallman Whitaker, 1st Lieut., Boone.
 William L. Hearst, Capt., Cedar Falls.
 Love Elree Pennington, 1st Lieut., Cherokee.
 Harry Franklin Kiesling, 1st Lieut., Dayton.
 Lawrence Lewellyn Craven, 1st Lieut., East Peru.
 William Franklin Carver, Capt., Fort Dodge.
 George Arthur Bemis, 1st Lieut., Garner.
 Earl Owen Reynolds, 1st Lieut., Greenfield.
 Nathaniel Palmquist, Capt., Hornick.
 Howard Low Beye, 1st Lieut., Iowa City.
 Roy Robert Miller, 1st Lieut., Keota.
 Dyre Henry Pelletier, Capt., New Hartford.
 Dan William Shine, 1st Lieut., Oelwein.
 Elmer Anderson Bare, Capt., Pleasantville.
 Lee Washbon Prescott, 1st Lieut., Sloan.

BOOK REVIEWS

HISTORY OF MEDICINE

Suggestions for Study and Bibliographic Data. By Fielding H. Garrison, A.B., M.D., Principal Assistant Librarian, Surgeon General's Office, Washington, D. C. Second Edition Revised and Enlarged. Octavo of 905 Pages With Many Portraits. W. B. Saunders Company. Philadelphia and London, 1917. Cloth \$6.50 Net. Half Morocco \$8.00 Net.

We have before us the second edition of Garrison's valuable book on the History of Medicine.

We doubt if the profession fully understand or appreciate the value of historical studies in medicine in the general culture of the physician. There is unfortunately a disposition on the part of our profession to measure the value of a work or a book from the standpoint of material values: "How much will it aid us in our daily work?" forgetting the broader value of culture as an asset in our peculiar relation to the public. In the introductory chapter the author considers the unity or solidarity of folk-lore in relation to the fundamental instinct of self-preservation and reproduction, religion and ethical systems. The instinct of self-preservation seeks for means to prevent death from disease and injury by means suggested to the primitive mind by folk-ways, religions or material. The author following the evi-

dence of this, gathered here and there—some of which still survives among some living persons—finds first in Egyptian, then in Oriental, and again in Grecian culture, a more specialized system of medicine, which brings us to periods of medical philosophy; the Byzantine, at the downfall of the Western Roman Empire 476-732 A. D.

A brief account of the leading features of medicine during the several early periods into which the history of medicine is usually divided, to the period of the Renaissance and the Revival of Learning (1453-1600). During all this period, medical practice was mixed with superstition and quackery and made but little advance.

In the seventeenth century, great changes occurred in literature, arts, sciences and philosophy, and medicine profited to a considerable degree, but the divorce of medicine and superstition was slow. During this century, individual contributions were numerous and the author considers one after another, the famous men of that period who added to medical knowledge—in chronological order as far as possible—shows that the great centers of medical education were Leuden, Paris and Montpellier. While most of the contributions to medicine were made in Europe, America comes in for a share. Enough progress had been made in the seventeenth century to admit of a century of theories and systems, which filled the eighteenth century. During this period of theoretical and speculative medicine, the author brings out the great characters and their work and contributions. The advent of Wm. and John Hunter and their pupils, brought English surgery to the first place. While speculation and theoretical medicine held the first place, the investigations of John Hunter, Jenner and others, gave London a leading position as a medical center. Not far on into the nineteenth century, French medicine and surgery took the first place under the influence of Desault and Bichat, of Louis and Laennec, Bouilland, Corvisart Pinel. In England, Stokes, Graves, Bright, and Addison. These and many others were the exponents of modern medicine.

The author reviews the influence of individual and groups of clinicians and investigators, many of whom are still alive. The author presents the history of medicine in its long line of mysticisms, theories and speculations, and shows that with few exceptions in clinical lines, modern medicine had its birth almost within the memory of men still living. German critics of the first volume claimed that a fair recognition was not given to German medicine, which is admitted to have been slower in separating from philosophical speculation than other modern nations. Students of medical history are more inclined to admire German thoroughness than German elasticity of mind in grasping modern thought and clinical refinement. No other book on medical history will be found which presents the facts on a difficult and involved subject and in as clear a chronological order as the one before us.

WHITE AND MARTIN'S GENITO-URINARY SURGERY AND VENEREAL DISEASES

By Edward Martin, A.M., M.D., F.A.C.S., John Rhea Barton, Professor of Surgery, University of Pennsylvania; Benjamin A. Thomas, A.M., M.D., F.A.C.S., Professor of Genitourinary Surgery in the Polyclinic Hospital and College for Graduates in Medicine; Instructor in Surgery, University of Pennsylvania; and Stirling W. Moorhead, M.D., F.A.C.S., Assistant Surgeon to the Howard Hospital, Philadelphia. Illustrated With 422 Engravings and 21 Colored Plates. J. B. Lippincott Company, Philadelphia and London. Price \$7.00.

In the preface of the tenth edition, we read as follows: "The tenth edition of this book has been completely exhausted, not for any lack of enterprise and urging upon the part of the publishers, but because the authors have felt that the work must be reset, rewritten, and reillustrated to fairly and yet succinctly present the views and practices of today." We have read the preface to the first edition written in 1897 and we have carefully examined the book itself. This has given us a conception of what has transpired in medicine during a period of twenty years and why it was necessary to rewrite the book. In 1917, genitourinary surgery has become one of the most important and most progressive fields of medicine, hence our obligation to the men who have placed their vast experience and knowledge at our disposal.

The first five chapters are devoted to the examination of the patient; the description of instruments and the method of using them and the manner of securing the best results from the use of such instruments as will give the best information as to the condition of the genitourinary tract, which can only be obtained by their skillful employment. Then comes an important chapter on Suppression, Retention, and Incontinence of Urine. There are many important facts to be considered under this head which should not be overlooked if the patient's welfare is fully in mind. The general practitioner is often confronted with serious problems in relation to a rather common condition—retention of urine—and here he will find information as to the best and safest method of meeting them. The surgery of the penis and urethra occupy chapters eight and nine. Some space is devoted to medical treatment of diseases of the urethra, which will be of much interest to the general practitioner as well as the surgeon. Gonorrhea and its complications in women and children receives considerable attention. Stricture of the urethra enters so much into the practice of the general practitioner in smaller cities that the well constructed chapter on this subject will be welcome. Under the head of Surgery of the Prostate, a brief review is given of the various operative procedures. The authors appear to advise prostatectomy when any serious undertaking is considered.

For the small fibrous prostate, the perineal route is advised, and for the large soft prostate, either the supra-pubic or the perineal operation may be selected. For the occasional operator, the supra-pubic route is said to be the safer.

A chapter is given on Sexual Weakness.

Surgery of the Bladder receives rather elaborate consideration. Four chapters are devoted to this most important division of the urinary tract. The surgery of the ureters has been well worked out since the introduction of ureteral catheterization and x-ray examinations. The various features of kidney surgery occupies six chapters and represents approved modern views of procedure. Fixation of floating kidneys meets with greater approval than in many clinics, but we believe the authors are correct in their estimate of the cases in which nephropexy should be employed.

The section on Renal Infections should be carefully studied—so much is involved if the infection should be tuberculous.

The section on Syphilis is a modern exposition of the particular subject which is occupying the attention of the medical profession. We are able to give space only to the chapter on the Laboratory Diagnosis of Syphilis, which is considered in some detail, and which should be noted by the general surgeon in the study of this disease, and the chapter on treatment. The authors prefer neosalvarsan to salvarsan, giving six doses of neosalvarsan, averaging 0.4 to 0.6 gm. at intervals of from five to seven days. Minute directions are given as to administration. They do not think accidents are liable to happen if proper care is observed. The administration of mercury by inunction is a favorite with the authors. This book can be highly recommended.

DISEASES OF WOMEN

By Harry Sturgeon Crossen, M.D., F.A.C.S., Associate in Gynecology, Washington University Medical School, and Associate Gynecologist to the Barnes Hospital, Gynecologist to St. Luke's Hospital, etc., St. Louis. Fourth Edition, Revised and Enlarged, With Eight Hundred Engravings. C. V. Mosby Company, St. Louis, 1917. Price \$7.50.

This edition has been entirely rewritten and reset. One hundred and forty new illustrations have been added. The work has been enlarged and now contains 1149 pages. The popularity of Crossen's work is evidenced by the appearance of four editions in a comparatively short time. It was apparently necessary to rewrite the book to bring it up in arrangement and matter to the present advanced state of this branch of medicine and surgery. Not only does the work represent a high order of literary and scientific merit but the make-up represents the best in book-making, including the illustrations which are of high order and are extremely helpful in following the author in methods of treatment. A useful fea-

ture of the book is the careful detail in methods of diagnosis and treatment, the omission of which is often unfortunate in text-books.

PROGRESSIVE MEDICINE

A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College, Philadelphia. Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Published Quarterly by Lea & Febiger, Philadelphia and New York. Price \$6.00 Per Annum.

Number 3, Volume 20, for September, is divided into four sections: Diseases of the Thorax and its Viscera—including the Heart, Lungs, and Blood-vessels by William Ewart, M.D., F.R.C.S. Under the head of Respiratory Affections, especial attention is given to pulmonary tuberculosis. Abstracting from Prof. Pearson, it is stated that the mortality from tuberculosis is not falling at the same rate as the general mortality. "Our efforts at prevention and cure have been so far futile. While practically all children are sooner or later infected, only few develop the disease; the majority are protected by a normal immunizing mechanism." It is further stated "that the only means of stamping out tuberculosis is the preventive inoculation of those who need it." Then follows the basis of treatment. The digest of literature on this subject is particularly interesting and suggestive.

The section on Obstetrics is by Edward B. Davis, M.D. Considerable space is given to the literature on complicating conditions of the kidney in pregnancy, and the complication of heart disease. A rather full survey of the literature on labor and obstetric surgery is presented. The maternal mortality in Cesarean section in a series of cases is given as 1.35 p.c.

Dr. William G. Spiller reviews the literature on Diseases of the Nervous System.

A MANUAL OF ANATOMY

By Henry E. Radasch, M.Sc., Assistant Professor of Histology and Embryology in the Jefferson Medical College, Philadelphia. Octavo of 489 Pages With 329 Illustrations. W. B. Saunders Company, 1917. Price \$3.50 Net.

This is a convenient work on anatomy for the use of the student of medicine and for the general practitioner. It cannot of course take the place of the larger books with colored plates, but will be found convenient and helpful in gathering the main anatomical facts in concise form. We recall the help obtained in reading Wilson's Anatomy, while a student, and referring to Gray's plates. The student

will particularly appreciate the advantages of Radasch in connection with class-room work, and the practitioner as a ready reference.

THE SURGICAL CLINICS OF CHICAGO

Volume 1, Number 5, October, 1917. W. B. Saunders Company. Published Bi-Monthly. Price Per Year \$10.00.

The papers in this number are by well recognized authors and of unusual merit and interest. An unique case of "Hernia of the Breast" is presented by Dr. Malcolm L. Harris. Dr. Carl Beck gives an interesting clinic on Tendo- and Neuroplasty; Dr. Herman L. Kretschmer on the injection of oil for the removal of ureteral calculus. Dr. David C. Straus presents two cases of hammer toe with operative treatment. There are other contributions of interest which we cannot consider on account of space.

THE AMERICAN REVIEW OF TUBERCULOSIS

Published by National Association for the Study and Prevention of Tuberculosis.

Its Purpose—The purpose of the Review is to give the best information available on tuberculosis from both American and foreign sources and on the clinical, pathological and sociological phases of the disease.

Its Scope—It is the only strictly medical journal on tuberculosis published on the American continent. Through its articles and abstracts it brings practically the entire medical field of tuberculosis literature under one cover in concise, readable form.

Its Staff—Its editorial staff consists of the following members: Dr. Edward R. Baldwin, Saranac Lake, editor-in-chief; Dr. Lawrason Brown, Saranac Lake; Dr. H. R. M. Landis, Philadelphia; Dr. Paul Lewis, Philadelphia; Dr. M. J. Rosenau, Boston; Dr. Henry Sewall, Denver; Dr. B. S. Veeder, St. Louis. Dr. Allen K. Krause of Baltimore is managing editor.

Its Price—The subscription price of the Review to members of the National Association for the Study and Prevention of Tuberculosis is \$2.00 per year, and to non-members, \$3.00 per year. A special rate of \$2.00 per year is offered to medical libraries. Reductions will also be given in clubs of five or more subscriptions.

For sample copies or further information, write to The National Association for the Study and Prevention of Tuberculosis, 105 East 22nd street, New York City.

SOCIETY PROCEEDINGS

The annual meeting of the Boone County Medical Society was held December 10 at the home of A. B. Deering. The following officers for 1918 were elected: President, G. H. Stanger, Boone; vice-

president, C. A. Noland, Ogden; secretary-treasurer, Wm. Woodburn, Boone; delegates to state society; E. M. Myers, and A. B. Deering. The meeting was also a farewell courtesy for Capt. M. C. Jones, who had been ordered to report for duty at Ft. Riley.

The Buchanan County Medical Society held its annual meeting in December at which time the officers for the ensuing year were elected, namely: President, J. H. McGrady; vice-president, W. P. Crumbacker; secretary-treasurer, B. B. Sells, all of Independence. Scientific papers were read by Drs. Crumbacker and Shellito.

At a meeting of the Des Moines County Medical Society held November 30, the following officers were elected: President, E. I. Woodbury; vice-president, J. I. Kelley; secretary-treasurer, J. S. Cooper, delegate, C. H. Magee, all of Burlington.

At the annual meeting of the Dubuque County Medical Society held December 11 the following officers were elected: President, J. H. Schrup, Dubuque; first vice-president, F. W. Meyer, Dubuque; second vice-president, W. J. Hierstein, Dyersville; secretary, C. E. Lynn, Dubuque; treasurer, H. Pahlas, Dubuque; board of censors, W. E. Costello, M. J. Moes and Mary Killeen, Dubuque; delegates, J. J. Rowan and H. G. Langworthy, Dubuque; librarian, W. P. Slattery, Dubuque.

The Hardin County Medical Society met in annual session at the Knights of Pythias hall, Eldora, December 17 under the presidency of E. C. Kauffman, of Union.

Dr. L. W. Littig, of Iowa City, was a guest of the society, and read a paper on Standardization of Hospitals. Officers elected for the ensuing year are: D. O. King, Union, president; H. H. Miller, Ackley, vice-president; W. E. Marsh, Eldora, secretary; C. M. Wray, Iowa Falls, treasurer.

Members of the Jasper County Medical Society held the thirty-seventh annual meeting of the society, December 14 in the assembly room of the library, at Newton. The charter members of the society were: Drs. H. E. Hunter, B. M. Failor, M. R. Hammer, Perry Engle and Schooley, of whom Drs. Engle and Hammer are now living.

Serous Meningitis, was the subject of the paper read by Dr. F. A. Ely, of Des Moines, who was a guest of the society. The election of officers resulted as follows: President, M. R. Hammer; vice-president, R. W. Wood; secretary-treasurer, S. E. Hinshaw, all of Newton; delegate, S. E. Hinshaw; alternate, J. C. Hill.

Dr. F. S. Bonnell, was host to the Jefferson County Medical Society, December 11. The occasion was the annual meeting of the society. The election of officers for 1918 resulted as follows:

President, M. C. Carpenter; vice-president, C. C. Tallman; secretary-treasurer, F. S. Bonnell; delegate to State Society, W. Fordyce and S. K. Davis.

At a meeting of the society held November 28, Dr. F. M. Tombaugh, of Burlington, gave interesting talks on Intussusception, and Fractures of the Patella.

At the annual meeting of the Johnson County Medical Society held recently at Iowa City, the following officers were elected: President, C. P. Howard; vice-president, N. G. Alcock; secretary-treasurer, L. W. Littig; delegate, L. W. Dean, all of Iowa City.

The Jones County Medical Society, December 11, in annual session at the John McDonald hospital, Monticello, elected officers for 1918, President J. M. Young, Center Junction; secretary-treasurer, T. M. Redmond, Monticello. Following the scientific program, a dinner was served by the hospital officials. A large representation of the society's membership was in attendance as well as several guests from other county medical societies.

At Fort Madison, December 6, the Lee County Medical Society, held its annual meeting. At this gathering the Lee county physicians expressed their loyalty, in one way, to the society members now in the medical service of the government by unanimously passing a resolution to pay the state society dues of such members. Three members of the society are now in the service of the government. Officers elected for the coming year were: President, R. S. Reimers, Fort Madison; vice-president, S. H. Dierker, West Point; secretary-treasurer, V. T. Doering, Fort Madison; delegate, C. F. Armentrout, Keokuk.

The scientific program was:

Aneurysmal Varix, Thomas Bess, Fort Madison; Internal Secretions, F. H. Dierker, West Point; Obstetric Accidents as a Cause of Gynecological Conditions, W. M. Kasten, Fort Madison.

Following the program a banquet was served.

The forty-fifth annual meeting of the Marion County Medical Society was held at the court house, Knoxville, December 13. The officers elected were as follows: President, E. C. McClure, Bussey; vice-president, J. R. Wright, Knoxville; secretary-treasurer, J. M. Weiss, Knoxville.

The annual meeting of the Mills County Medical Society was held at the office of Dr. G. M. Agan, Glenwood. December 10. The officers elected were: President J. M. Donelan, Glenwood; vice-president, I. U. Parsons, Malvern; secretary-treasurer, J. G. McCue, Silver City; delegates to State Society, H. C. Yates, Emerson, and J. M. Donelan, Glenwood.

At this meeting the following resolutions were unanimously adopted:

"Whereas, The chief burden of the medical volunteer is the possible hardship which may be suffered by his family when deprived of the income from his professional practice, and

"Whereas, We claim that patriotic devotion is universal among all worthy members of the profession, and no less so among those who stay at home than with those who go to war, therefore, be it

"Resolved, That the members of the Medical Society of Mills County pledge ourselves to share the financial burdens of our brothers who enter the country's service during the present war, and that the same be done in the following way:

"When any medical volunteer, on leaving home, assigns to his colleagues patients definitely under his care, the members of the profession to whom such patients are assigned will give them all due care and charge the usual fees for attendance, and will, as soon as convenient, transmit one-half the amount of fees so collected to the aforesaid medical volunteer, or his assigns, and when the volunteer resumes his home duties, will refer back to him his patients according to the ordinary dictates of medical ethics."

The fifteenth annual meeting of the Osceola County Medical Society was held at the court house, Sibley, December 10 at which time the 1918 officers were elected: President, G. E. Vemeer, Sibley; vice-president, F. S. Hough; secretary-treasurer, F. P. Winkler, Sibley; delegate, W. E. Ely, Ocheyedan.

The Page County Medical Society, met at the Delmonico Hotel, Shenandoah, December 12. The officers for the coming year were re-elected as follows: President, B. S. Barnes, Shenandoah; vice-president, R. J. Matthews, Clarinda; secretary-treasurer, Milo O. Brush, Shenandoah; delegates, R. J. Matthews, and J. O. Weaver.

The Plymouth County Medical Society met at Union Hotel, Le Mars, at 7:00 P. M. December 4. Preceding the meeting, dinner was served at the hotel with the Le Mars physicians as hosts.

President J. H. Kerr, being in the U. S. service at Deming, W. E. Cody, of Merrill, was selected as president pro tem. Upon roll call the following members responded: Brunner, Cody, Cole, Fettes, Heller, Hombach, Jastram, Joynt, Lamb, Larsen, Mammen, Reeves, Shepard and Vernon.

The officers chosen for 1918 were: President, W. H. Heller, Remsen; vice-president, M. J. Joynt, Le Mars; secretary-treasurer, A. H. Jastram, Remsen; delegate to State Society, W. J. Brunner, Akron; alternate delegate, W. T. Shepard, Le Mars; censor for three years, J. L. Reeves, Le Mars. The local county dues were increased from \$1.00 to \$3.00.

The following papers were then read and discussed: Acidosis, W. H. Hombach, Remsen. Village and Rural Hygiene, W. H. Heller, Remsen. Salvansan, Foreign and American, and its Uses, W. W. Larsen, Le Mars.

The bills presented were allowed and paid. A vote of thanks was extended to the Le Mars physicians for their hospitality. The following members were selected to prepare papers for the next meeting which will be held in Le Mars the first Tuesday in February, W. E. Cody, J. L. Reeves, J. A. Lamb, R. F. Bellaire.

A. H. J., Sec.

The regular annual meeting of the Polk County Medical Society was held December 18 at the Savery, Des Moines. The banquet at 6:30 was attended by about one hundred fifty including the guests.

Music and an entertainment by vaudeville artists from the Orpheum added to the pleasure of the evening.

Dr. Joseph L. Miller, Associate Professor of Medicine, Rush Medical College, now a major in the United States Reserve, delivered an address on The Non-Specific Character of Bacterial Vaccines. Lieut. W. L. Witte, of the United States Public Health Service, outlined the plan for the internment of persons afflicted with venereal diseases. Officers elected for the coming year are: President, W. E. Sanders; vice-president, Eli Grimes; secretary, Thos. F. Duhigg; treasurer, E. B. Mountain; delegates, W. S. Conkling, J. F. Auner, R. A. Weston; alternates, J. W. Martin, A. H. Leonard, and C. F. Howland.

The Polk County Medical Society will remit the county dues and pay the state dues for this year of all the members now engaged in the medical service of the government.

The annual meeting of the Pottawattamie County Medical Society was held at the Public Library building, Council Bluffs, December 4, at which time the officers for the ensuing year were elected: President, J. H. Cole, Council Bluffs; vice-president, Rose H. Rice, Council Bluffs; secretary-treasurer, G. C. Giles, Oakland; delegates, V. L. Treynor, Council Bluffs, and A. O. Wyland, Underwood.

The Poweshiek County Medical Society met at Grinnell December 4. Officers elected for the year were: President, E. F. Talbot, Grinnell; vice-president, J. T. Padgham; secretary-treasurer, C. E. Harris; delegates, C. E. Harris and E. F. Talbot.

The Wapello County Medical Society met in annual session at the Commercial Club, Ottumwa, December 4.

Following a six o'clock dinner, the members were addressed by Ottumwa laymen: M. L. Toulme gave a talk on the Doctor as an Economic Factor, and J. K. Mahon spoke on Business Methods in Medicine. An interesting discussion followed the addresses. The officers elected for the ensuing year are: President, F. W. Newell; vice-president, W. J. Herrick; secretary, J. F. Herrick; member board of censors, E. G. Barton; delegate to State Society, B. D. La Force; alternate, M. Bannister.

The Journal of the Iowa State Medical Society

VOL. VIII DES MOINES, IOWA, FEBRUARY 15, 1918 No. 2

SOME OBSERVATIONS ON TYPHOID FEVER IN IOWA*

MAX LEVINE AND H. E. MIDDLETON, Ames

Typhoid fever is not a reportable disease in Iowa. It is therefore impossible to adequately study typhoid morbidity for the state, but we think it is safe to assume that the mortality reports (at least since 1916) are sufficiently complete and reliable to warrant their use.

In this paper we are to deal with deaths from typhoid fever since 1910, with particular reference to their distribution between urban and rural communities and in the different counties of the state.

SOURCES OF DATA

Population—A census is taken every five years; by the state in years ending in five, and by the Federal government in years ending in ten. There is such disagreement between these two censuses that it is necessary to employ one or the other. According to the 1910 U. S. census, there was a decrease in population of the state, between 1900 and 1910. It is pointed out in the state census for 1915 that if the 1900 U. S. figures are accepted, then there must have been a comparatively large increase between 1910 and 1915. Without attempting to determine which of the reports is correct, we feel that for the purpose of this study it seems preferable to employ the state census. The population for intercensal years was calculated by the arithmetical method, and in all instances, the mid-year population (July 1) is used.

From the biennial reports of the State Board of Health were obtained considerable data as to deaths from typhoid fever in fourteen of the fifteen cities of the first class, as well as total deaths in the state. The monthly death lists of the State Board of Health were very helpful; and from them was obtained the information as to distribution by counties as well as by months. In addition to these publications, the secretary of the State Board of Health, Dr. G. H. Sumner,

very kindly furnished considerable information which had hitherto not been published and which enabled us to rectify certain discrepancies.

TYPHOID FEVER IN IOWA SINCE 1905

In table 1 are given the deaths, and annual death rates from typhoid fever from 1905 to 1916 inclusive. These figures are shown graphically in plate 1. There is a distinct maximum rate of 16.7 per 100,000 in 1910. Before 1910 the rate was quite constant, at about 13.5; fluctuating between 13.3 and 13.8 for the years 1905 to 1907, with a drop to 12.3 in 1908 and a rise to 14.1 in 1909. Since 1910 the typhoid fever death rate has been constantly decreasing and in 1916 it was only 6.5.

TABLE 1
Death and Death Rates from Typhoid Fever in
Iowa 1905-16

Year	Mid-year Population	Death from Typhoid Fever	Typhoid Rate per 100,000
1905	2,217,451	295	13.3
1906	2,232,253	309	13.8
1907	2,247,055	305	13.6
1908	2,261,857	278	12.3
1909	2,276,659	321	14.1
1910	2,291,461	383	16.7
1911	2,306,263	317	13.7
1912	2,321,065	262	11.3
1913	2,335,867	247	10.6
1914	2,350,669	225	9.6
1915	2,365,461	196	8.3
1916	2,380,263	155	6.5

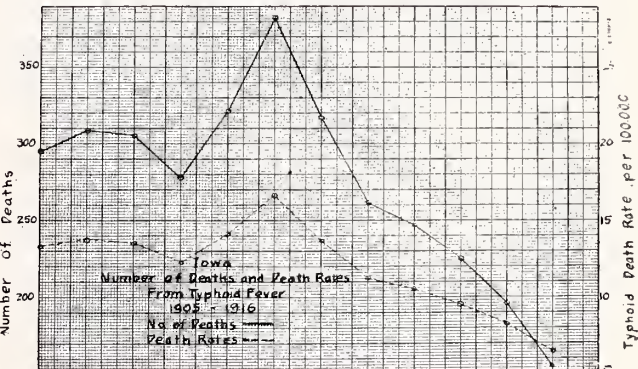


PLATE I

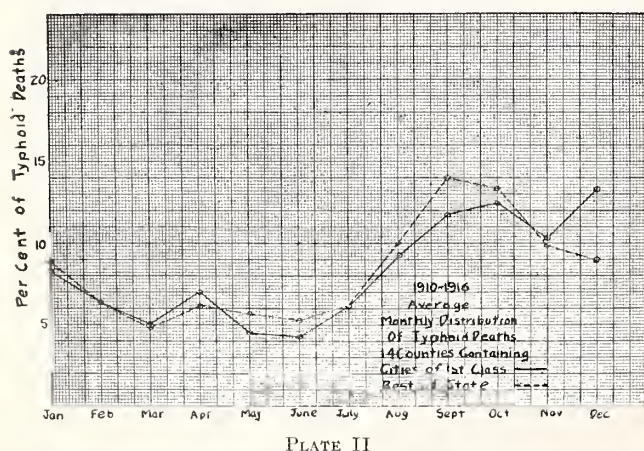
*From the Laboratories of the Department of Bacteriology and the Engineering Experiment Station, Ames, Iowa.

Considering the state as a whole we may say that deaths from typhoid have not been excessive since 1905, but as will be shown later, typhoid fever is not evenly distributed throughout the state, but is localized to a great extent in the more urban communities. In 1910 there were 383 deaths as compared with 155 in 1916. This marked decline indicates quite clearly the possibility of decreasing considerably further, if not eradicating this entirely preventable disease.

Monthly Distribution—Plate II shows the mean monthly distribution of deaths from typhoid fever for the seven years 1910-16. Reference to this graph shows that deaths from typhoid fever are most prevalent in the entire state during the summer and early fall.

No data was available for the monthly distribution in the large cities. Considering that the fourteen cities of the first class constitute 60 per cent. of the population and are responsible for more than 80 per cent. of the typhoid deaths in their counties, we assume that the monthly distribution in these counties may be safely employed as an index of the seasonal distribution in the cities.

In the state exclusive of these fourteen counties, containing cities of the first class, deaths from typhoid are most numerous in September; there is a constant decline from September to March, slight rise in April and a rapid ascent in August to the maximum in September. For these comparatively rural districts of the state, typhoid fever is essentially a summer disease, and the curve of seasonal distribution points strongly to contact and insect transmission.



From January to November the seasonal distribution in the cities is quite parallel with that for the rest of the state. There is observed the same slight increase in early spring and rapid rise during summer, followed by a decrease in the early fall, but whereas the typhoid in the state exclusive of the most urban counties, continues on

the decline after November, that of the cities of this first class rises sharply to a maximum in December. This sudden increase in fall typhoid we believe is due to contaminated foods, particularly water and milk.

URBAN VS. RURAL TYPHOID

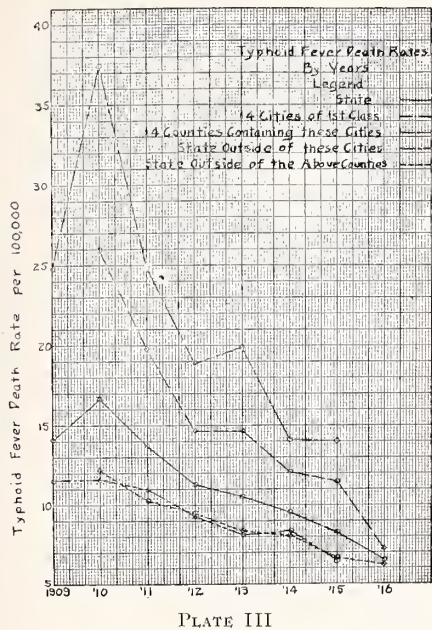
It is contended by such an eminent authority as Dr. Wm. T. Sedgwick, that typhoid fever is a disease of urban rather than rural communities. On the other hand, many sanitarians maintain that it is a rural disease. The discrepancy seems to be for the most part in the definition of urban and rural and the arbitrary differentiation on population. A community of 500 living in a small area, and often supplied with common public utilities is an urban community and should be regarded as such. To arbitrarily class all towns with less than 10,000 as was done in the past, or 2500 as is now recommended as rural, is undesirable. The Iowa census classification whereby all incorporated towns and villages are classed as urban in contradistinction from the unincorporated rural communities, although not ideal, is preferable.

There are in Iowa fifteen cities of the first class, *i. e.*, with population of 15,000 or more. For fourteen of these, records of deaths from typhoid since 1909 were available. In Plate III are shown the annual death rates (1909-16) from typhoid in fourteen cities of the first class, as compared with the rest of the state and the entire state. There are also shown the annual death rates of the fourteen counties containing the cities of the first class and the state exclusive of these counties. The deaths and death rates from typhoid fever for the fourteen cities considered are given in Table 2.

TABLE 2
Deaths and Death Rates of 14 Iowa Cities of the First Class 1909-1915

Year	Mid-year Population	Deaths from Typhoid	Death Rate per 100,000
1909	443,041	110	24.8
1910	453,776	170	37.4
1911	464,511	115	24.8
1912	475,246	90	18.9
1913	485,981	97	19.9
1914	496,847	70	14.1
1915	507,451	76	15.0

It is very striking that for each of the years studied, the death rate was considerably higher in the cities than in the rest of the state. The rates were closest together in 1914, when the city rate was 14.1 as compared with 8.1 for the state, exclusive of these cities and 9.6 for the entire state.



Whether this excessive incidence in the cities of the first class is real or merely apparent is at present difficult to decide. The location of hospitals in the cities naturally attracts rural patients, and these non-resident deaths will of course increase the city rates. Unfortunately we were not permitted to inspect the death certificates and make corrections for such non-residents. An error due to non-resident deaths will be considerably reduced by a consideration of the counties containing the cities of the first class; for it is reasonable to believe that influx of cases to the city hospitals will be from the adjacent territory, if at all.

From Plate III it is evident that the typhoid death rates in the fourteen counties containing cities of the first class are considerably above the rest of the state. We question very much whether any appreciable proportion of rural typhoid cases find their way into city hospitals; and all the evidence points to a close interrelation between the typhoid rate and the density of population.

DENSITY OF POPULATION VS. TYPHOID DEATH RATE

In Plates IV and V and Table 3, are shown the relation of density of population in the ninety-nine counties to their typhoid fever death rates. The density employed is that given in the 1915 census, and the death rates are the mean for the seven years 1910 to 1916 inclusive. There is a marked correlation between density of population and the typhoid rate. Of twenty-nine counties with less than thirty people per square mile, com-

prising a population of 431,837, the mean typhoid rate for the seven years was 6.4 per 100,000. In fifty-one counties with 30-50 per square mile and a total population of 999,120, the mean typhoid rate was 9.3. In nineteen counties with over fifty per square mile, comprising a population of 904,953, the mean rate was 14.5.

TABLE 3
Relation of Density of Population to Mean Typhoid Fever Death Rates (1910-1916)

Density of Population	No. of Counties	Mean Population of Counties 1910-1916	No. of Deaths	Mean Annual Rate per 100,000
Less than 30	29	431,837	194	6.4
30-50	51	999,120	649	9.3
Over 50	19	904,953	919	14.5

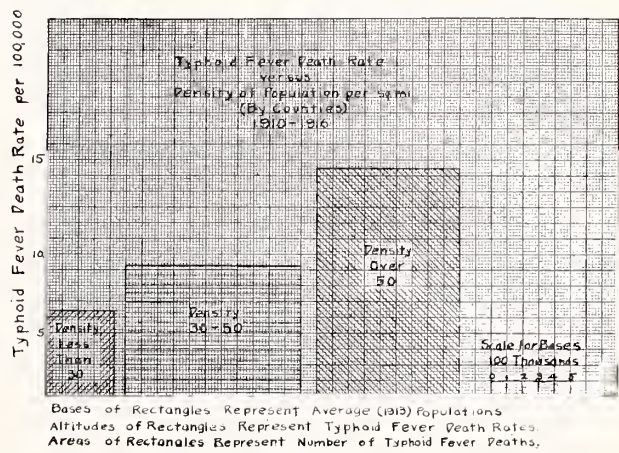


PLATE IV

URBAN POPULATION VS. TYPHOID DEATH RATE

The relation of the typhoid rate to the proportion of urban and rural population in the counties is indicated in Plates VI and VII, and Table 4. All incorporated communities are regarded as urban. There are thirty-one counties with less than 40 per cent. of the population in incorporated towns or cities. In these counties with an aggregate population of 507,504, the typhoid rate for the seven years 1910 to 1916 was 8.0. Of fifty-three counties with an urban population of 40-60 per cent., and a total population of 1,038,188, the typhoid rate was 9.4. In the fifteen most urban counties with a population of 790,218, the typhoid death rate was 15.0 per 100,000 of population. These figures illustrate again that in Iowa, typhoid fever is characteristically an urban rather than a rural disease.

A consideration of the counties with respect to the sizes of their incorporated towns may be instructive.

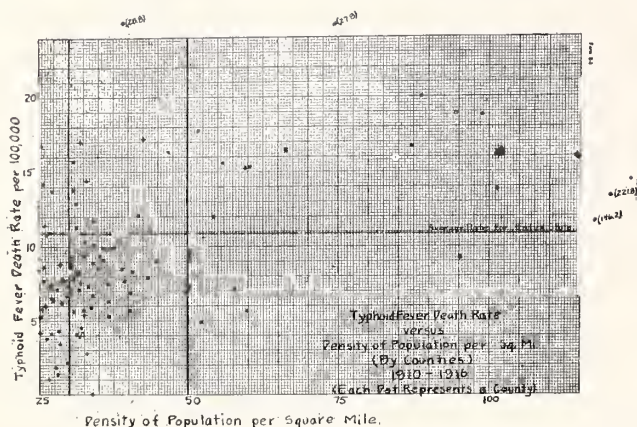


PLATE V

TABLE 4

Relation of Distribution of Population Between Urban and Rural Communities to the Mean Typhoid Fever Death Rates (1910-1916)

Per cent. Urban Population	No. of Counties	Mean Population of Counties 1910-1916	No. of Deaths	Mean Annual Death Rate per 100,000
Less than 40	31	507,504	248	7.0
40-60	53	1,038,188	684	9.4
Over 60	15	790,218	830	15.0

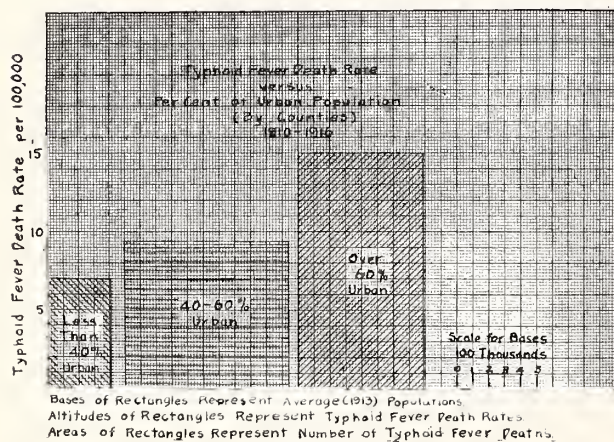


PLATE VI

There are eleven counties which do not have a single city with a population over 2,000. The

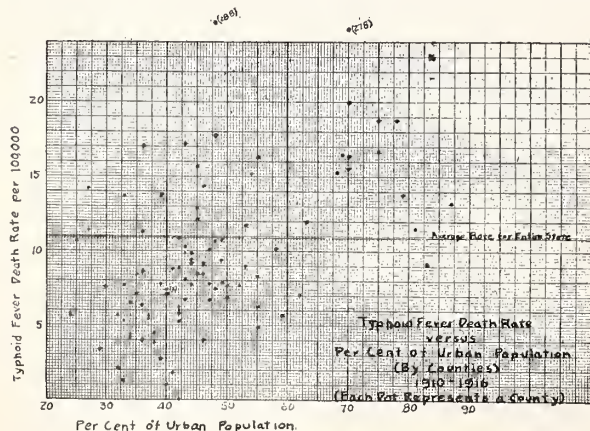


PLATE VII

mean typhoid rate for these counties is 6.4, as compared with 8.9 for seventy-three counties which have cities of the second class (population 2,000 to 15,000) and 15.0 for the fifteen counties in which there are cities of the first class. This is shown in Table 5.

TABLE 5

Comparison of Mean Typhoid Fever Death Rates of Counties According to the Size of Their Incorporated Towns

	Mean Population 1910-1916	Deaths 1910-1916	Mean Annual Death Rate per 100,000
15 Counties containing cities of the 1st class (15000 or more)	790,218	830	15.0
73 Counties containing cities of the 2nd class (2000-15000) but not of the 1st class	1,381,913	859	8.9
11 Counties without cities of the 1st or 2nd class	163,779	73	6.4

SUMMARY AND CONCLUSIONS

Typhoid fever is decreasing in Iowa. For the past seven years it has been most prevalent in the cities of the first class, and relatively rare in rural communities.

In the more rural districts of the state, typhoid fever is essentially a summer disease, while in the cities of the first class, typhoid is not only high in summer, but there is a maximum incidence in the late fall.

The typhoid death rates and the density of population are well correlated. In counties with a population of less than thirty per square mile, the mean typhoid death rate for the seven years 1910-1916 is only 6.4, as compared with 9.3 for the counties with a density of thirty to fifty, and a rate of 14.5 for the most dense (more than fifty per square mile) counties.

Typhoid fever in Iowa is at present an urban rather than a rural disease.

There is undoubtedly contact transmission from the city to the country, through shippers, merchants, and convalescents. From the country the typhoid is brought back to the city via foods, water, milk and vegetables.

This vicious evil can be broken if proper and adequate measures are taken quickly to eliminate typhoid fever from our large cities, where the disease is most prevalent.

NON-TUBERCULOUS INFECTIONS OF THE KIDNEY

M. J. MOES, M.D., Dubuque

I wish to take under consideration some of the affections of the pelvis of the kidney. Of these, pyelitis is of most importance.

No matter what the condition of the pelvis may be, whether it is a simple irritation catarrhal in type, or the presence of a stone or of a new growth, there is always an accompanying inflammation. It must be understood that a pyelitis means an inflammation and that this inflammation is always due to an infection, and an infection means the presence of pathogenic bacteria.

Recent studies have shown that the bacteria most commonly responsible are:

1. *Bacillus coli*,
2. *Bacillus tuberculosis*,
3. In addition to these, a variety of organisms such as the streptococcus, staphylococcus, bacillus typhosus, paratyphoid bacillus.

The importance of the colon bacillus is becoming more keenly appreciated constantly, and this applies in particular to children and infants. The relation of colon bacillus infections of the urinary tract in the young to the developmental period is yet to be determined.

The routes of invasion by pathogenic bacteria are three:

1. By the urinary tract, called an ascending infection; the common route of secondary infections;
2. By the blood stream, usually referred to as hematogenous; this is usually a primary infection;
3. By contiguity, as by direct transmission from the colon to the kidney, or by way of the lymphatics.

The best example of blood stream infection is the bacillus tuberculosis, which obtains access to the blood from some focus of tuberculous infection elsewhere in the body. The ascending type of infection is usually secondary to a cystitis.

The great majority of pelvis of the kidney infections are ascending in type, and for this reason are apt to be unilateral. Blood stream infections are apt to be bilateral and have their primary focus in the kidney substance instead of in the pelvis. No doubt the damage done to the kidney by the secretion or excretion of toxins of disease has lowered resistance locally in the kidney parenchyma and predisposed to infection.

In the ascending or urogenous type, the important factors are:

1. Urinary stasis from whatever cause, in any part of the urinary tract;

2. Abnormally patent ureteral orifices, such as permit a backing up or back-flow from the bladder;

3. The presence of pathogenic micro-organisms.

A renal calculus acts by inducing damage to the kidney substance, or to the pelvis or ureter, and obstructing the passage of urine, thereby favoring infection.

The symptoms of pyelitis vary and the affection is often unsuspected. They may be so dominated by the condition to which they are secondary, as, for instance, the typhoid in the descending infection, that they are overlooked, unless an examination of the urine has revealed the condition or some complication appeared, indicating the urinary tract.

The symptoms may be divided into those of general and of local significance.

The general symptoms are those of fever, chills and toxemia; the local are those of urinary disturbances and pain.

In mild cases there may be only a little fever or none at all, with no bladder symptoms to draw attention to the urinary tract; even in severe cases with chills, fever, and sweat, there may not be at the beginning anything definite indicating a kidney involvement. The pain is often absent or slight, and the kidney, if palpable, may not be very tender. It may radiate along the ureter and into the thigh, genitals and perineum; or on the right side may simulate an appendicitis.

Pyuria is the important finding in pyelitis. There is usually an albuminuria which may be of a moderate grade. Frequent micturition is a common symptom in all cases. The urine may attract attention by its cloudy aspect or rarely a red tinge may indicate slight hematuria. In infection due to the colon bacillus or the typhoid bacillus, the urine is acid. This is always true if such organisms are found unassociated with others. In the acute cases with fever, the affected kidney is apt to be tender. In the complicated forms of pyelitis, such as hydronephrosis and pyonephrosis, there may be local swelling indicating enlargement of the organ. In the diagnosis of these conditions let me emphasize the point that as soon as pus or blood is found in the urine, their source should be diligently searched for until definitely determined. This may require cystoscopic examination, ureteral catheterization and the x-ray.

The occurrence of pain or tenderness over a kidney should lead to a thorough examination of the urine. If this pain or tenderness is associated with slight temperature or with occasional chills, a pyelitis should be suspected. If pus is

found in the urine, it must be definitely determined:

1. Whether it has its origin within the urinary tract, and,
2. If it has, it should be traced through the bladder and ureter up to the kidney.

A cystoscopic examination will reveal any local bladder condition and show which ureteral orifice is discharging the turbid urine. Ureteral catheterization must be avoided in the presence of acute infection and great precaution must be taken in the less acute cases so as not to infect the healthy ureter.

All urine obtained by catheter requires careful examination. Smears should be made of the pus and stained. If the predominating organism appears to be the colon bacillus, there are a number of staining methods which help to identify this organism. If in doubt—culture. If no bacteria grow in the culture, the tubercle bacillus should be suspected, but this organism should always be sought for in all urinary infections and other means of identification employed.

The condition called hydronephrosis may be either congenital or acquired. The latter type concerns us most. It is due to an obstruction to the flow of urine anywhere along the course of the urinary passage. If the cause is operating in the bladder, prostate or urethra, the condition is likely to be bilateral. If one ureter is compressed by a pelvic tumor or obstructed by a stone, it will probably be unilateral.

The obstruction to the outflow and the accumulation of fluid causing pressure, leads to atrophy of the kidney substance and invites infection. Atrophy of the kidney deprives the body of the function of that organ. An intermittent type is due to the kinking or twisting of the ureter of a movable kidney or to an impacted calculus.

Acquired hydronephrosis and its complicated form, pyonephrosis, is a surgical condition.

Many factors have to be determined in studying this condition:

1. The site and degree of obstruction;
2. The nature of the obstruction, whether due to impacted stone or compression from without;
3. The amount of function possessed by the affected kidney;
4. The presence or absence of any lesion of the other kidney.

This may involve cystoscopy to determine obstructive conditions in the bladder, exploration of the urethra, the condition of the ureteral orifices, catheterization of the ureters, the collection of urine from each side to determine its character

and its rate of flow, the evidence of nephritis on either side, the degree of obstruction and the functional impairment of one or both kidneys. In addition to this, a thorough x-ray examination by a competent roentgenologist is imperative.

If but one kidney is affected, the condition is absolutely a surgical one, if for no other reason than the protection of the sound kidney.

Nephrolithiasis—The causes of stone formation in the pelvis of the kidney are far from clear in spite of the many investigations aimed at determining them. Many factors are thought to enter into the etiology of this condition, such as:

1. The findings of many of the urinary solids in saturated solution,
 2. The influence of local irritation,
 3. The presence of foreign bodies such as bacteria with infection, or of degenerated epithelium.
- The chemical constitution of renal calculi has always been of interest, and since the advent of x-ray diagnosis has been of added importance.

The stones may consist of uric acid and urates, oxalate of lime, of phosphates or of rarer elements. Of these, those containing lime salts are the most easily demonstrated by the x-ray. The gravity of the condition depends largely on the presence or absence of infection. While infection is absent, the symptoms are the results of the mechanical effects of the stone, such as pain or colic, due to movement of the stone or to obstruction. When infection intervenes, however, the symptoms change and those of infection appear.

Diagnosis—When symptoms suggesting renal colic are present, or of stone in the kidney without renal colic, a thorough x-ray examination should be undertaken. At present the x-ray is always reliable. It is now rare for a stone to be missed by a skillful operator who understands interpretation. Both kidneys should always be examined as well as the ureters and bladder. Care should be exercised to prevent confusing these shadows with those of gall-stones or phleboliths.

Treatment—Under the subject of treatment I wish to refer briefly to the management of the pyelitis cases, especially of the acute type. If the attack is acute or if the patient suffers from an exacerbation of a chronic process, the condition must be regarded as any acute infection is regarded, and absolute rest in bed obtained. This is particularly imperative during the early or toxemic period when chills and temperature are present.

In regard to diet one must not forget that in all acute infections the food demands of a febrile patient are as great or greater than those of a

well person under similar conditions. Milk has been shown by practical experience to be the basis of all diets. If used exclusively, however, for too long a period, there is underfeeding because the average patient cannot take milk in sufficient amount to supply the bodily need. Between four and five quarts is too high a daily average to expect any patient to consume. To eliminate this difficulty, I strive to have each patient take in addition to other foods, two quarts in the twenty-four hours. To the milk may be added milk sugar and to this may be added cereals with cream and sugar, toast and a small amount of butter. Occasionally a patient prefers buttermilk or soured milk. If the condition responds quickly to treatment, an absolute milk diet may be adhered to for the first week.

Next to diet the ingestion of large amounts of water is important, with the object in view of flushing out the kidneys, ureters and bladder. If necessary to encourage the drinking of water, some flavor may be added.

In the management of the medicinal treatment, the reaction of the urine must be closely watched. In the case of colon bacillus or typhoid pyelitis, the urine is usually acid. In the streptococcal and other forms which are secondary to an infection lower down, it is usually alkaline. By rapidly changing the reaction of the urine, a less suitable medium for the growth of bacteria is often obtained. In case of an acid urine, alkaline salts such as the bicarbonate of soda, the citrate and actate of potassium, are used singly or in combination, in doses of twenty to thirty grains, at two hour intervals, until the urine becomes alkaline. The dose is then reduced in amount and frequency until just enough is given to keep the urine alkaline. This method I have found more practical in the colon bacillus infections of infancy where urotropin is sometimes not well borne on account of bladder irritation. If on the other hand the urine is alkaline, an attempt should be made to change it to acid. This, one will find a very difficult undertaking, usually. Our only reliable drug is benzoic acid or one of its salts, sodium or ammonium benzoate. However our chief aim in rendering an alkaline urine acid is to render conditions favorable for the proper therapeutic affect of our most efficacious urinary antiseptic, urotropin. The action of this drug seems to depend on the presence of an acid medium. In the course of elimination through the kidney, formaldehyde is liberated, and it is maintained that this liberation occurs only in acid urine. Guided by this belief, if the urine is not already acid, an attempt should be

made by the use of bezonic acid or its salts, to render it so. One must not regard urotropin as being in any sense diuretic. The drug may be administered for long periods of time without evidence of harm. The only unfavorable symptoms I have ever had from its use has been bladder distress and some gastric uneasiness. There is a great individual variation of response to the action of this drug.

I will not go into the subject of vaccine therapy or local treatment of chronic infections of the kidney pelvis.

TUMORS OF THE KIDNEYS*

R. E. GREEN, M.D., Creston

Mr. Chairman and Members of the Society:

It was with a great deal of hesitancy that I decided to present to this Society a paper on primary renal neoplasm, as my experience with this type of cases has been limited and I felt there would be among its members, others whose experience would enable them to give a more serviceable presentation of the subject. The material forming the basis of this paper was obtained from the general medical literature, such men as Israel, Guyon, Garceau, Kuster and Chevelier being responsible for most of the statements.

Practically all varieties of malignant new growths are encountered primarily in the kidney. Those most frequently found are the hypernephroma, sarcoma, tumors of embryonal origin, and the medullary type of carcinoma. These various forms of tumors present very little to distinguish them clinically one from the other, but the embryonal forms, sarcomas, and hypernephromas are more prone to develop voluminous tumor masses than are the carcinomas.

The frequency with which renal tumors are encountered was variously stated by the authorities consulted, but is probably encountered from one to five times in a thousand cases. Tumors of the kidney are therefore quite rare, and as their symptomatology depends upon the invasion and destruction of tissue in a remote anatomical region, their symptomatology is necessarily meager, and the diagnosis is always difficult at a time when the diagnosis would be of most value to the patient. Tumors of the kidney are usually unilateral. They are most frequently found before the tenth and after the fortieth years. Men are somewhat more prone to the dis-

*Read before the Sixty-sixth Annual Session of the Iowa State Medical Society, Des Moines, May 9, 10, 11, 1917.

case than are women, but inoperable renal tumors are more frequently encountered among females than among males for the reason that the abdominal wall is frequently lax and will accommodate a larger growth without causing distress, also hematuria may be present for long periods of time without causing anxiety on the part of the patient. The diagnosis of a renal tumor usually has for its foundation one or more of the following symptoms; hematuria, pain, and tumor. Pain is present at some stage of the disease in 80 per cent. of the cases. It is more marked in children than in adults, although exceptionally a renal tumor will run an entirely painless course throughout. The pain varies in character from a dull ache in the lumbar region to the most severe pains, attended occasionally by bladder irritation and tenesmus. Most frequently, however, it is described as dull, dragging, or pressure in the lumbar region. The sudden filling of the renal pelvis with blood, or the blocking of the ureter by a clot, will cause attacks of renal colic. Carcinoma is more likely to be attended by pain and hematuria, without a demonstrable renal tumor, than are the other malignant processes. The presence of a tumor is more frequent in, and is occasionally the only evidence of this condition in infants and young children. It is also usually demonstrable in cases of hypernephroma and sarcoma in adults. These tumors are firm in consistency, rounded in outline, sometimes nodular, but show no sharp edge, and ordinarily are not tender on manipulation. They usually make their appearance in the flank, and extend forward and downward. By reason of their position behind the posterior layer of the abdominal peritoneum to which the colon is attached, this structure is usually carried forward and lies over the tumor, or occasionally it may be found to the inner side of the mass. Varicocele is occasionally observed, and the occurrence of a varicocele in a man past forty should be considered suggestive of a possible renal tumor.

Hematuria, by which is meant the presence of blood in the urine in macroscopic quantities, is the most constant and important symptom of a renal tumor, it being the initial symptom in 25 per cent. of the cases, and is present in over 70 per cent. during the course of the disease. The hematuria of renal tumor is usually profuse, appears with increasing frequency, and in an apparently causeless manner, and does not respond to the accepted modes of treatment of renal hemorrhage due to other cause. The symptom of hematuria, in order to be of value in a diagnosis of a tumor of the kidney, must be shown to be

of renal origin, excluding the lower urinary tract as a possible source of the hemorrhage. Cystoscopy is the most certain means of excluding the bladder and prostate. Ureteral catheterization combined with radiography, form our best means of excluding the ureter and renal pelvis. While radiography, employing modern technique, and the injection of opaque substances into the renal pelvis, may be expected to furnish valuable information as to the presence of a renal tumor and its relation to the colon and neighboring structures, I have found no mention of this in the literature at my command. Aside from the blood, the urine may show casts of the ureter and occasionally bits of tissue that have broken off from the tumor. Israel states that soft, whitish, reddish, or pale yellowish clots, the size of a maggot or somewhat larger, are pathognomonic of renal neoplasm. Aside from the blood and occasional bits of tissue, the urine shows nothing of importance.

In the Journal of the American Medical Association of February 24, 1917, Herman Louis Kretschmer, of Chicago, tabulates 197 cases of hematuria in which an accurate diagnosis was made. Of these, including twelve cases of carcinoma of the prostate, there were eighty-two cases or 41 per cent. of malignancy of the urinary tract, 12 or 6 per cent. of these being tumors of the kidney.

The differential diagnosis of a renal neoplasm usually resolves itself into the differentiation and the exclusion of the various other causes of renal hematuria, particularly to the exclusion of cystic kidney, renal calculus, tuberculosis and the so-called essential renal hematuria which may properly necessitate an exploratory nephrotomy for its positive identification and exclusion. The occurrence of metastasis in the lungs, liver, and bony skeleton, will often aid in the diagnosis of this condition, but at a stage when the diagnosis will prove valueless to the patient.

The following case from the records of Cottage Hospital at Creston, will illustrate the part played by hematuria and the importance in determining its cause. The patient, a maiden lady, thirty-seven, school teacher, sought advice because of general weakness. She gave a history of having had severe attacks of hematuria over a period of two years. Blood was found in the urine. There was some backache and some general so-called "rheumatic pains." There had been no great loss of weight. There was no cachexia. The physical examination did not reveal any gross abnormality. Acid-fast organisms were found in the urine on the first examination, but repeated examinations of catheterized specimens failed to show others. The right kidney

was movable, easily palpable, not enlarged. The left kidney could not at this time be palpated. After a lapse of several weeks, she returned again, complaining of more severe pains, and tender areas were discovered on the shaft of the right humerus, and near the head of the left femur. Radiographs of these areas showed the presence of bone tumors. She also complained of some blurring in vision of the left eye, and the ophthalmoscopic examination disclosed a pathological condition of the retina, but nothing definite. A radiograph revealed at this time an enlarged left kidney which could now be palpated with difficulty. Later metastasis formed in the flat bones. Due to the findings of hematuria, with bony and probably retinal metastasis, a diagnosis of renal tumor, probably hypernephroma, was made. The patient lived four months longer, but no autopsy was obtained.

From a study of the subject of the diagnosis of renal tumors, the writer offers the following conclusion. The occurrence of hematuria is an event of extreme importance to the patient; it always suggests the possibility of malignancy of the genitourinary tract, and demands thorough immediate investigation and positive explanation.

RENAL FUNCTIONAL TESTS AND PYELOGRAPHY IN KIDNEY DIAGNOSIS

NATHANIEL G. ALCOCK, M.D., Iowa City

These two subjects are to be here discussed only from the standpoint of their value in the diagnosis of the kidney diseases that are taken up in this symposium, namely, tumor of the kidney, stone in the kidney, non-tuberculous infections of the kidney, and tuberculous infections of the kidney.

First, as to the value of the functional tests in making a diagnosis of these conditions. Remember that we are using the renal test as an aid in diagnosis, not as an aid in the prognosis of the case after operation. The real value of the test is in determining the difference in the functional capacities of the two kidneys as contrasted from determining the complete renal capacity of the patient. This infers then, that the kidney tests that are to be used must be used when the ureteral catheters are in place.

Of the functional tests that I will discuss, the secretion of water and the phthalein test will be the only ones. I do not mean to infer by that that these are the only renal functional tests, or that they are the best ones. There are a great many tests and a great many very good ones, some of them, probably, better than either one or

both of these; but the test that should be used is the one that the physician is accustomed to using and the one that he can use best. Some men prefer, instead of the phthalein, the indigo carmine, and their results are just as good as the results of the phthalein. And so it is with other tests.

At the outset let it be remembered that these tests are by no means mathematical findings, and they should only be considered in relation to the other physical findings, and especially in relation to the clinical history. You cannot make a diagnosis from them alone, and no attempt should be made at that procedure. They are simply aids in the confirmation of your clinical diagnosis, not absolute determinents.

By the water excretion test, I mean simply this, the comparative quantity of urine that the two kidneys secrete and the response of each kidney to added water intake. This is very simple but, at times, quite a reliable test; and it is performed in two different ways. First, by simply having the catheters in the ureters and measuring the quantity of fluid that the two kidneys secrete in any given time. That is one way of carrying it out. The other way is by placing the catheters in the ureters, measuring the quantity of fluid that comes through each kidney, and then forcing fluids into the patient and making note of whether or not either or both kidneys respond to the increased fluid intake and which kidney responds the sooner and to the greater extent. Usually this finding is parallel to the phthalein finding.

For the phthalein test I use the phthalein that is made by the Hynson, Westcott & Company; and that comes all ready to inject. The technic of the procedure is very simple. With the ureteral catheters in place, and the instrument out of the bladder, and with the urine coming freely from each catheter, I inject intravenously 1 cc. of the phthalein solution, which contains 6 mg. of the phthalein. Note is made of the exact minute at which the phthalein enters the circulation. The urine from the two catheters is now dropping into two separate bottles, each bottle containing a few cc. of 5 to 10 per cent. sodium hydroxide. These bottles are watched until the first red color appears in each one. Note is made of the time that has elapsed from the injection of the phthalein to the appearance of the color in the sodium hydroxide. With the first appearance of the red color you have the time that it takes the kidney to excrete the dye and force it down through the ureteral catheter. This finding is termed the period of secretion. As soon as the first color appears in the sodium hydroxide solution the sodium hydroxide bottle is taken away

from the catheter and another empty bottle is substituted. The same is done with the other catheter. Then the urine is collected for definite periods from the time of appearance of the color. Usually I collect it for two fifteen-minute periods, the time being measured, not from the time of the injection of the dye into the veins, but from the time that it appeared from the catheter. Next, the quantity of phthalein excreted during each period is measured by a colorimeter, and I find that the little Dunning colorimeter is about as reliable as any of them. Of course, you cannot measure with it to as fine a point as you can with a more expensive one; but the results are quite satisfactory. At the end of the period of the collection of the urine for the estimation of the phthalein, the bladder should be catheterized to determine whether or not there is anything in it, and especially as to whether or not there is any phthalein. If there is phthalein present in the bladder, the quantity should be measured, and if it is very great, your functional test of your kidney in this instance has very little value.

In performing the phthalein test in this way, there are certain factors that influence it to a greater or less extent, and these must be kept in mind when you are drawing conclusions from your findings.

First, there is the matter of the presence of the catheter in the ureter. There is no question in my mind but what the presence of the catheter in the ureter has a very marked effect at times upon the secretory function of the kidney. It is not infrequent that you will find this to be true. You will put your catheters into the ureters, remove the instrument from the bladder, having emptied the bladder first, and then you will notice that the two kidneys are not secreting at the same rate. We will say that the right kidney is secreting twice as fast, or three times as fast, as the left one. The natural inference is that you have a vast difference between the capacities of the two kidneys. Maybe for thirty minutes this difference will be apparent, and during that time the right kidney will have put out probably twice as much as the left one. However, during the next thirty minutes you probably will be surprised to find that the two kidneys are secreting at about the same rate; that is, the presence of the catheter in the ureter may have one of two effects. It may inhibit the secretion for a short time, or it may increase the secretion. Therefore, in order to get the most accurate information from this test the catheters should have been in the ureters long enough to allow the kidneys to apparently adjust themselves to the new condi-

tions. At least you should leave them in there long enough to note that there is no change in the rate of secretion; that is, until this period of variance has passed over. The second factor that one must keep in mind is the nervous influence upon the secretions of the kidneys. This is especially true in female patients. They come to cystoscopy dreading it a great deal, and are extremely nervous; and it is not infrequently the case that you will find that after the catheters have been placed in the ureters, as long as they are there the kidneys will show a very marked hyper-secretion. For instance, only recently I catheterized the ureters of a patient who secreted in one fifteen-minute period 95 cc. of urine from the right kidney and 85 cc. of urine from the left kidney; or, she was secreting from her two kidneys at the rate of 24 oz. an hour. After the catheters were removed from her ureters, she secreted less than 24 oz. of urine in the next twenty-four hours. This hyper-secretion is, of course, of no value in making your diagnosis whatever. The third factor is the possibility of leakage of urine around the catheters down into the bladder. Ureters vary greatly in size, and not always do they completely block the catheters so that no flow of urine around the catheters is possible. Also, often when a catheter is passed into the ureter and seems to be tight, it is due to a spasm of the ureter around the catheter and afterwards the ureter relaxes and it is loose. Therefore, as soon as the test has been performed, the bladder should be catheterized to determine whether or not there is any phthalein present in the bladder. Now, if this phthalein in the bladder is of any appreciable amount, you can not tell whether it has come from your right kidney or from your left kidney. And, therefore, your phthalein findings in such cases are of very little value.

In tumors of the kidney, the renal functional tests, both in quantity of water secreted in a given time and the quantity of phthalein put out, is a fairly good index of the quantity of kidney that has been destroyed or involved with your tumor formation. Let me illustrate this by one case. A diagnosis of tumor of the right kidney was very apparent from the patient's history and his physical findings. A mass could be felt in the region of his right kidney. The phthalein finding and the excretory findings of the water of the two kidneys amounted to the fact that the left kidney was doing exactly twice as much as the right kidney was. This test was carried out, not at one time, but at three successive sittings; and the findings in every case were exactly the same. At operation a hypernephroma was found

of the lower pole of the kidney that involved almost exactly one-half of the kidney itself. The upper half of the kidney was perfectly good and was the part that was carrying out the excretory function on that side.

In conditions of stone in the kidney, or the kidney pelvis, or the ureter, interpretation of the functional tests is a little bit different.

First, in stone in the pelvis, or stone in the ureter, the first thing that must be taken into consideration is the amount of obstruction that the foreign body is producing. If the obstruction is complete, the function of the kidney, of course, is nothing and, of course, can not be determined because you cannot pass a catheter past the obstruction. Nothing at all comes down from that side. However, if the obstruction is incomplete, the secretion of that kidney may be very much increased both as to the quantity of urine put out and as to the quantity of phthalein. Usually the amount of urine excreted is greater than the amount of phthalein put out; that is, they are not in proportion. Also, the urine that is secreted by a kidney whose drainage is partially shut off, is of very low specific gravity, and is largely nothing but water.

Second, in cases of stone in the substance of the kidney, the phthalein findings are not reliable at all. It is a known fact that the presence of a stone in the substance of the kidney, even though it be a small one, and be doing a very small amount of damage to the secreting substance of the kidney, will produce almost a complete suppression of the function of that kidney; that is, with the stone in the substance of the kidney, the amount of urine excreted and the amount of phthalein put out is as a rule very small. Also, it is a fact that the removal of that stone from the kidney substance brings about a complete return of the function of that kidney. Therefore, in cases of stone in the substance of the kidney, no conclusion in any way should be drawn from any of the functional tests of that kidney; and one should not allow a very low renal capacity on that side to indicate a nephrectomy.

In tuberculosis of the kidney, the functional capacity early in the disease is increased. That is almost invariably the rule, and is a finding that has some diagnostic significance. Later in the disease when the infection has gone on to the point of kidney substance destruction, the output of the kidney, both as to water and as to phthalein, is usually in proportion to the amount of kidney substance that is cut off from the pelvis of the kidney, or that is destroyed by the infection. But, this is not always the case and you cannot absolutely rely upon it.

In the non-tuberculous infections of the kidney, the phthalein and the function capacity findings vary with the type of infection. First, in cases of pyelitis the secretion of the kidney is usually early in the disease increased unless you have a pyelitis where the pelvis is filled with a thick purulent pus. There, of course, the functional capacity will be decreased. But, in the average run of cases of pyelitis, during the acute stage the function is usually increased; and during the more or less chronic stage the function is just about the same as on the good side. Second, in those infections that involve the kidney substance, the renal capacity, shown by the phthalein and the water secreted, is usually decreased, especially if the infection involves large portions of the secreting areas. If the infection is localized to one small abscess, then the capacity of that kidney may not be changed in the least.

From the above, then, the conclusion can be drawn that the renal capacity, as shown by the output of phthalein and water, is not always entirely reliable and that there are factors that enter into it which make the interpretation of the findings rather difficult and sometimes impossible.

One of the greatest values, I believe, in these functional tests is not in determining the amount of injury due to a bad kidney, but in determining the capacity of a good kidney. I believe that it is more important to know that a good kidney is entirely good and has a good secreting capacity than it is to know how bad the bad one is. But, even here, those same factors of error must be kept in mind.

There is another place where the functional tests, I believe, are of great value and that is in those cases where it is impossible either to find a ureteral orifice, or after having found it, to pass a catheter into it. It is very important here to know whether the ureter that cannot be catheterized comes from a secreting or a non-secreting kidney; and this can be determined quite nicely with the phthalein test. Catheterize the good side with as large a catheter as it is possible to pass. Then empty the bladder completely of water and remove the instrument, leaving the catheter in place. Then administer the phthalein intravenously, and collect all the secretions from the catheter for a thirty-minute period, or longer, and measure that phthalein. Immediately at the end of the period of collection of the urine from the catheter, catheterize the bladder and see whether or not there is any fluid in it, and then measure the quantity of phthalein that this fluid contains. Very frequently this will demonstrate for you an abso-

lutely inactive kidney connected with a ureter that you cannot catheterize.

Now, as to the value of pyelography. Pyelography is the photographing of the pelvis of the kidney when it is filled with some substance that is opaque to the x-ray. This is a procedure that has been used for the past twelve years, and many different substances have been used for the purposes of throwing a shadow. The first substance that was used was oxygen, but this was not only dangerous but quite unsatisfactory and has been entirely discarded. After the oxygen had been tried out they began using different silver salts. Of these silver salts that have been used, there are those that are soluble and those that are insoluble. The soluble salts that have been used have been numerous, and they include such as argyrol, callorgal, cargentos, and a few others. All of these salts are extremely toxic and absorbent. They are soluble and, therefore, quite easily absorbed; and many accidents have been reported, several of them fatal, from the use of these solutions. Pyelography with such substances was not without very grave danger and should only have been used where it was absolutely necessary for the diagnosis. Of the insoluble silver salts, the silver iodide was the favorite. This was made up in an emulsion and because it was emulsion it was quite thick and quite hard to run through the ureteral catheters; and, therefore, not an easy one or an ideal one to use. Furthermore, it was found that the use of silver iodide emulsion, while it was not absorbed, did, however, produce in some cases small abscesses of the kidney. In those cases the small particles of silver were probably forced up into the tubules and acted as a foreign body and produced the irritation. Recently there has been put upon the market a thorium nitrate solution which seems to be absolutely ideal. When made up for the purposes of pyelography, it forms a thin, watery solution that is not irritating and that, when absorbed, is not toxic. So far no bad effects have been reported from its use, and I believe that it is absolutely safe to use it in practically every case.

The technic of its use is very simple. The ureteral catheter is passed into the ureter, and I believe that it is best not to pass it to the pelvis of the kidney. The instrument is removed from the bladder and the patient is placed upon the x-ray table. The thorium solution is injected through the ureteral catheter by means of a 5 or a 10 cc. syringe until the patient has the first sensation of pain in the kidney. Just as soon as that point is reached, the injection stops and the picture is taken.

I believe that there is no one finding in kidney diagnosis that gives us as much information and as reliable information as pyelographies. Furthermore, I want to most earnestly emphasize the fact that it is perfectly safe under these new conditions. With the more toxic substances that were used, it was more dangerous, and among the general practitioners the procedure has gotten a very bad name, and in many cases they advise their patients not to have it done. I believe that is wrong now that we have an ideal substance to use. I have never had any bad results from this procedure, and I have read of no untoward effects from it. Of course, there are a few cases in which I do not believe that it is indicated. For instance, if you have a large pyonephrosis with thick creamy pus coming down from it, I do not believe that it is indicated to do a pyelography on such a case, or cases of that particular type. In the first place, of course, it is not necessary for a diagnosis; and in the second place, while I do not believe that it is dangerous, yet there is the possibility of not being able to get the substance out of the kidney pelvis after you've gotten it in there because those conditions are not conditions of good drainage.

Now, briefly, as to the finding in pyelography in these different diseases of the kidney.

First, in tumors of the kidney, pyelography may give you a great deal of information and it may give you none. Sometimes the pelvis is entirely normal as to size and shape and the kidney produces no deformities in it whatever. The characteristic deformity, however, that tumors produce, and especially hypernephromas, is that the calyces are elongated and narrow. Usually the true pelvis of the kidney is not materially enlarged.

Second, in stone in the kidney, pyelography is very important. The pictures of the stone itself should be taken before the pyelography is done. These plates will show a shadow of the stone, but from them you cannot determine the exact location of that stone, whether it is in the kidney substance, in the pelvis of the kidney, or in the upper portion of the ureter. However, with the pelvis filled with an opaque substance, it is of course, very plain that the position and exact location of the stone will be told perfectly. In those cases where the stone is in the pelvis of the kidney and is surrounded by the thorium solution, the shadow of the stone will usually show up just a little bit darker than the rest of the pelvis, and, therefore, can be located. The same thing is true in the ureters.

Third, in the non-tuberculous infections of the kidney, pyelography is of very little value in the

early cases. It begins to give you definite findings only when the infection has gone to the point of producing actual changes in the kidney. First, in the cases of pyelitis the changes that are seen are not absolute, and are only slight, usually consisting in a slight dilatation of the pelvis of the kidney and a rounding of the ends of the major calyces. Also, and this is important, the pyelography may give you the exact cause of the pyelitis in demonstrating a strictured ureter or a partially kinked ureter. This finding, of course, is very definite.

In cases of pyelitis with destruction of the kidney substance, or in reality in cases that you can practically define as pyonephrosis, the pyelography, of course, gives you very definite information. However, when these cases have gone along to complete destruction of the kidney, the pyelography is not necessary and in those cases, as I have said, it is not indicated. In cases of kidney abscess, the pyelography may or may not be of value. If the abscess communicates with the pelvis of the kidney, it can be outlined if the substance reaches the abscess cavity and fills it up, as it usually does; and there is no harm in the procedure in such cases.

In tuberculosis of the kidney, the findings are not diagnostic. They are negative unless there has been some marked anatomical change. The changes that one most frequently finds are abscess cavities communicating with the pelvis, deformed pelves rather than dilated pelves, and strictures of the ureters, which are always suspicious of tuberculosis.

Just one more word in relation to pyelography. I said at the beginning that in performing a pyelography the catheter should be passed into the ureter but not completely to the pelvis of the kidney. I make that statement for this reason. If the catheter is passed to the pelvis of the kidney, the course of the ureter is more or less determined by the catheter itself. If the ureter makes some unusual bend, the catheter will straighten it out, whereas, if the catheter is passed just a short distance into the ureter, and then the thorium solution is injected through the catheter up through the ureter into the pelvis of the kidney, you get a shadow of the ureter as it lies in its natural position; and this very frequently will give you the outline of kinks or strictures of the ureter that may clear up your diagnosis entirely. Also, in cases of double pelves, a condition that is not uncommon, if the catheter is passed as far as it will go, it may pass up into one of the two pelves and the pyelography then will only outline the single pelvis, whereas, if the catheter had

only reached a short distance into the ureter, the thorium solution would have gone up into the two pelves and would have outlined them both.

SUMMARY IN SYMPOSIUM ON SURGICAL CONDITIONS OF THE KIDNEY*

CHARLES J. ROWAN, M.D., F.A.C.S., Iowa City

The points which appear to me to be especially worthy of emphasis in considering the practical value of this symposium, are:

First—That most surgical conditions of the kidney are not diagnosed nearly as early as they should be. For instance, it is not over-stating the fact to say that at the time when the majority of cases of hypernephroma are diagnosed, they have already become inoperable, either because of extensive local growth with involvement of the renal vein, by extension along its lumen, or because of metastases to other parts of the body, especially the bones. This is not so much the case in tuberculosis of the kidney, because it does not run such a rapid course. However, too many cases of tuberculosis of the kidney are first diagnosed when they must be given a bad prognosis, either because of involvement of the other kidney or an advanced tuberculous cystitis. The late diagnosis in these kidney conditions is often due to the fact that these lesions may not produce gross changes in the urine until they are far advanced, and that the small amount of pus, or blood, is not thought to be of any great significance; so that valuable time may be lost when the expectant plan is followed in the hope that the condition will clear up of itself; whereas, any pus or blood in the urine should be considered as a serious finding until its origin has been carefully traced down and proved to be of minor importance.

An additional cause for the delay is often due to the fact that the early symptoms may be referred to the bladder, which is blamed for the condition and treated accordingly. The resultant procrastination is likely to be especially serious in hypernephroma which may become inoperable from local growth of metastases during this period of expectant treatment, and in renal tuberculosis where the other kidney is likely to be involved.

The second point of practical value is the importance of careful microscopic urinalysis in obscure or atypical cases which seem to indicate a surgical intra-abdominal condition. It is true

*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, May 9, 10, 11, 1917, Des Moines.

that an acute intra-abdominal inflammation may cause an increase in the number of leukocytes in the urine, and even some red blood corpuscles. But this should not lead us to operate in these cases without a most painstaking endeavor to exclude the kidney or ureter as the source of the trouble. This is also true in chronic conditions.

The statistics of Cabot as to the high percentage of cases of renal and ureteral stone, which have been operated on with the mistaken diagnosis of appendicitis, and to less extent other conditions, should make a very deep impression on all of us. He reports that in 153 cases of stone in the kidney or ureter, twenty-six abdominal operations had previously been done without relief. The appendix had been removed in ten cases. An exploratory laparotomy had been made in eight cases, and other operations including fixation of the kidney, operations on the tube and ovary, operations for adhesions, cholecystitis, etc. It is undoubtedly true that a careful examination would have prevented the useless operation in most of these cases.

His statistics also emphasize the fact that a urinalysis alone is not sufficient to exclude kidney or ureteral involvement. This is demonstrated by the fact that in these 153 cases the urine was entirely negative in 14 per cent. There was no history of colicky pain in 25 per cent., and the x-ray was negative in 6 per cent.

It is important, however, to know that in none of these 153 cases were all these three symptoms absent at the same time, which should indicate to us that we cannot safely depend on urinalysis alone, but must combine with it the careful study of the history of the patient, the use of the x-ray, and sometimes a waxed tipped catheter. The fact that false shadows may be caused by calcified mesenteric glands, phleboliths, etc., shows the necessity of radiograph catheters and stereoscope plates.

In addition to these twenty-six cases out of the 153, there were other cases that had been treated for a long time for such conditions as sacroiliac strain, lumbago, neurasthenia, etc. Even with a careful study and examination of our cases, a mistake will occasionally be made, but many mistakes will be avoided. It has been our practice for some time in these atypical and obscure cases, with slight changes in the urine, to ask Dr. Alcock to make a careful cystoscope examination of the cases, sometimes including ureteral catheterization and pyelography, and quite a few diagnoses have been cleared up in this way where the symptoms and history pointed to an abdominal condition rather than the kidney.

The third important point for emphasis is, I think, the value of the functional tests. Like all other laboratory procedures, the functional tests are to be considered only with other signs and symptoms. It is not rare for patients with good and improving function, as shown by the test, to die of uremia, and on the other hand some patients have been refused operation because of the poor results from a functional test, only to be operated on successfully elsewhere. These functional tests are of great value, and good kidney surgery cannot be consistently done without their use. But on the other hand, we must not place too great dependence on them and should use them only in conjunction with careful physical examination and observation and good surgical judgment.

Discussion

Dr. A. M. Pond, Dubuque—The Symposium on Surgical Conditions of the Kidney has covered a pretty wide range of surgical procedure. Very briefly I am going to give you the history of a case presenting itself at my office some four or five years ago. A boy of fourteen, a farmer, perfectly robust and splendidly developed, hard, muscular, vigorous and strong, gave me this story: That since he was five years of age, when he undertook to do any lifting in a stooping position, as lifting a weight, he would be suddenly seized with a very excruciating pain in the right epigastrium, and that this pain would be followed by a perceptible mass that would gradually grow, and that his mother used to take a warm flat-iron and iron this out of the little boy. Later he found that this pain would subside if he could stand on his head in the corner. So he would get in the corner and stand on his head, when he would be relieved of pain. Diagnosis had been made of all sorts of things; of gall-stone disease in a boy of fourteen, of appendicitis, etc. And I very frankly told the parent that I had not the remotest idea what was the matter with the boy, but that we would put him in the hospital and watch him. We put him in the hospital. We had not the advantage then of making separate tests of the excretion from the kidneys; but we noticed that at, say 8 o'clock, he would pass eight or ten ounces of urine, perhaps at 3 o'clock he would pass fourteen ounces of urine. I finally persuaded the manager of the hospital to allow him to push a weight or lift something heavy because I wanted to elicit the symptom that provoked this lad to stand on his head in a corner, so we induced him to help move a piano, he had this excruciating pain, we put him to bed and found the increasing mass in the epigastrium, and we found that it disappeared after the passage of a perfectly limpid quantity of urine. We made a diagnosis of hydronephrosis and found a hydronephrotic kidney. I might say also that in removing this kidney the adrenal gland was undoubtedly bruised and perhaps traumatized. The kidney

was removed without serious trouble surgically. The lad was put to bed, and about 4 o'clock in the afternoon it was discovered that he had a temperature of 99.8 and a pulse of 160. His cheeks were pink and eyes bright, his pulse was soft, it was not the bounding, snappy pulse of infection; it was a soft, rapid pulse, but it was full, and we found some hematin crystals in the urine. After a few days we felt that there might be a traumatized adrenal gland, and we had an acute hyperthyroidism that passed by within forty-eight hours without any special treatment except perhaps the increasing of the fluid intake and washing this condition out. The hematin crystals persisted for a few hours, as I remember, and finally subsided, and the boy made a perfect recovery. Naturally when we consider the indications for surgical operation on the kidney, we think of three prominent conditions: tuberculosis, calculus and misplaced position. In other words, the three surgical conditions of the kidney which the average man most commonly sees are increased motility, tuberculosis, and calculus.

Dr. E. D. Rohlf, Waterloo—After listening to the scientific papers which comprise this symposium, I do not think there is much that I can add. However, there are a few valuable lessons which we may take out of them. Certainly not all of us are so equipped in our offices or so protected in our work with laboratory systems that we are enabled to carry out the scientific procedures that have been outlined to us today. Therefore it seems to me that when we find conditions which are not clinically or laboratorily equipped to properly investigate, for the protection of our patients it should be our duty to see that they get into the hands of a man who can do the work efficiently. A further lesson that I take is this: It is not always easy to find the thing we look for in our laboratory, but it is the proper interpretation of the finding which makes the patient safe in our hands, and it is only by wide experience that we are enabled to get the proper interpretation of these things. And again, it is our duty to see that our patients get into the hands of men that are scientifically prepared to take care of them in the proper way. Another thing that would be of great advantage to the medical men in local communities is the establishment of community laboratories so that we would not have to put patients to the expense of going a long distance to see men who are equipped to finish up the diagnosis for us. We of Black Hawk county are connected with a laboratory protected by the County Medical Society, and it is of much help to those of us who are in close touch with it and has also been a stimulus to do better work. Therefore I would recommend to this Society that wherever it can be done, you establish a clinical laboratory in your county.

Dr. Henry Albert, Iowa City—The question of infection of the kidney is so important that it has attracted a great deal of attention, especially in recent years. Several mooted questions in connection with

infection of the kidney have led a number of investigators to perform experiments. Many of these experiments have been made with the idea of determining what proportion of the cases are due to an ascending infection and what proportion to a descending infection, and, if due to an ascending infection, whether or not the infection is principally by way of the lumen of the ureter or by way of the blood-vessels or lymphatics of the ureter. Some years ago Sampson, by means of injection experiments, proved that there was a close relationship between the blood-vessels of the kidneys and the blood-vessels of the bladder through the blood-vessels of the ureter. A little later Sakota, by the injection of infant cadavers, showed that there were similar connections between the lymphatics of the kidney and those of the bladder by way of the lymphatics of the ureter. These experiments would suggest that infection might take place by way of the blood-vessels and lymphatics without taking place by means of the lumen of the ureter. The recent investigation by Stewart, in which he implanted the ureters into the intestines and then in a certain number of cases developed infection of the kidney, shows very definitely that in the majority of instances infection of the kidney, when ascending, is by way of the lymphatics rather than by way of the lumen of the ureters, as was believed for a long time. More recently Eisendrath and Schultz have made similar experiments and have come to similar conclusions. Some years ago we performed several experiments with the idea of showing certain points in connection with the descending route of infection; that is, infection of the kidneys by way of the blood-vessels. We tied off one of the ureters of the rabbit. Three weeks later we made an examination and found, as expected, a hydronephrosis. We then injected colon bacilli intravenously. One week later we made another examination and found that the hydronephrosis had become a pyonephrosis. In the pus we found the colon bacillus the only organism present. The other kidney remained normal. This experiment serves to show that the question of lowered vitality, in this case produced by the hydronephrosis, is one of the determining elements in the production of infection. It is well known that bacteria often enter the body and are eliminated or killed without actually producing a lesion. In this case the question of infection of the kidney was largely determined by the lowering of vitality caused by the hydronephrosis. It also serves to show that infection of the kidney by way of the blood-vessels is not necessarily bilateral, as we are inclined to think, because the bacteriemia provides a good opportunity for both kidneys to become involved.

Dr. C. S. James, Centerville—I think the profession in general appreciate the necessity for some form of simple kidney function test. Many of us are so situated that in a particular case we are not able to take advantage of the services of a skilled assistant, a cystoscopist, or a man of special genitourinary

experience. Many a man is situated in reference to his patient in such a way that he hardly feels justified in putting his patient to the expense of such a procedure, and we would like to have some simple plan of testing the renal function that would be an indicator to us as regards renal efficiency in general. And I trust you will pardon me for taking a moment of your time to state to you the method employed by Dr. Edward Martin in his Clinic in the University Hospital. This is not to be compared with the phthalein test, it is not to be compared with the ureteral catheterization test, but is a practical procedure that every one can use either in or out of a hospital and which gives the physician in a particular case a relative conception of the renal function. Three days are required to complete the test. The first day a 24-hour specimen of urine is secured under the usual conditions; the second day a 24-hour specimen of urine with a water-free diet, and the third day a 24-hour specimen of urine with water-plus intake. The interpretation of findings is this: Given, for example, 40 ounces of urine the first day under ordinary conditions with specific gravity of 1015; the water-free-diet-day there is 40 ounces of urine with s. g. of 1015; the water-plus-day there is 40 ounces of urine with s. g. of 1015. What is the interpretation of these findings? With these findings we have a sick kidney which does not respond to the load placed upon it; it is a kidney that does not adapt itself to the amount of water intake and the amount of excretion called for. On the other hand, a kidney that has a degree of normal activity will respond to that test and you will have an increase of specific gravity on the water-free-day and a decrease in the total quantity, whereas the next day, with water-plus intake, you will have an increase in total quantity of urine and a decrease in the specific gravity.

Dr. A. G. Fleischman, Des Moines—I wish to call the attention of the profession to the value of topical application to the renal pelvis in the treatment of non-tuberculous infection of the kidney. The profession has been somewhat tardy in recognizing the efficiency of applying medicaments to the renal pelvis through the ureteral catheter, and I think perhaps the delay in this matter has been due to the fact that pelvic lavage is considered a difficult procedure. I will concede that at one time topical application to the renal pelvis was a difficult feat, mainly because the former cystoscopes were so constructed that ureteral catheterization was a difficult procedure, but by reason of improvements that have been made in the newer cystoscopes, particularly with the close vision type of lens, approach to the ureter has been simplified so that today the passage of a ureteral catheter into the pelvis and the subsequent instillation of some medicament into the renal pelvis has been greatly facilitated. In the last six months I have had the privilege of attending half a dozen cases of simple pyelitis where there has been an absence of organic condition, as stones, ureteral deviation, or strictures. In each of these cases, after sub-

sidence of the acute symptoms, the patient was catheterized with a small ureteral catheter (size No. 5 French) and silver nitrate instilled into the pelvis, beginning with one-half per cent., and introduced at intervals of seven to eight days. The condition usually required three to four treatments, and in every instance there was a considerable amelioration of the symptoms and repeated examinations of the urine very carefully made, failed to reveal the presence of any specific organism following this procedure. As to pyelography, fortunately I have the privilege of observing Dr. Burns' work, and I can attest very favorably to what Dr. Alcock said with reference to the non-toxicity of thorium. I have seen the entire bladder filled with thorium nitrate, and the patient experiencing no ill effect from it. In my own limited experience I have used thorium nitrate, and the subsequent pyelograms revealed pictures of clear delineations. The most important thing to remember in connection with phthalein is to select the test that will give you the maximum amount of information with the least possible expenditure of time, and I think the phthalein carries that out to the utmost. Phthalein is a drug that is devoid of toxicity, it is non-irritating, it is easily applied and can be carried out by anybody.

Dr. F. M. Pottenger, Monrovia, Cal.—I should like to emphasize the fact that if one does not find tubercle bacilli in a specimen of catheterized urine, that this does not mean that tuberculosis is not present. It simply means that bacilli were not discharged in the specimen obtained, at least were not found in it. The fact is not sufficiently appreciated that tuberculous patients do not discharge bacilli continuously. A test may be made today with bacilli present, while tomorrow they may fail to be found. Any tuberculous disease must not be ruled out on the absence of bacilli. I have seen cases where operations have been done to remove a kidney because the urine was bacilli free on one side and positive on the other. Later tuberculosis developed in the other kidney. In this connection I desire to call attention to a clinical sign of tuberculosis of the kidney or any other inflammation of the kidney, which has not been referred to today; namely: spasm of the lumbar nucleus. If you will recall, the kidney is supplied by nerves from the lower four or five thoracic and first lumbar segments of the cord, particularly the eleventh and twelfth thoracic and first lumbar. When the kidney is inflamed, the sensory and motor changes are very apt to be found in the tissues supplied from these segments; therefore, spasm of the lumbar muscles should be looked for when an inflammation in the kidney is suspected. This condition is the same as the muscle spasm in appendicitis, cholelithiasis and inflammation of the lungs. I have found this an excellent clinical sign and so far it has not failed me.

Dr. H. V. Scarborough, Oakdale—There is but one point I would care to add to this discussion. In consultation with Dr. Alcock we have been making rou-

tine examination of the urine and where suspicious we have made repeated examinations. I have come to be of the opinion that many cases are overlooked, even occasionally in the most painstaking examination. Therefore we should make more thorough examination and not wait for clinical manifestations of the disease. If the kidneys are tuberculous we will then more often be able to determine that fact even when we have never found any clinical symptoms to indicate it.

Dr. Alcock—There is only one thing I want to speak of in closing the discussion of my portion of the symposium; and that is in regard to what Dr. James had to say as to the water test. This is a most excellent test and one that can be used in a short period of time. You will be surprised to see the change in the secretion of the kidney in thirty minutes after the patient has been given two glasses of water. That is the simplest test of all. Also the specific gravity is a very important thing. Remember that I am talking about the functional test, not from the standpoint of prognosis, but diagnosis. In referring to prognosis in these cases I would emphasize the fact of the amount of urine excreted and especially the specific gravity of the urine. For instance, in prostatectomy the specific gravity of the urine is of very vital importance. Such a case should never go to operation with fixed specific gravity of the urine of less than 1015. That is an exceptionally simple test and an exceptionally good one.

DIAGNOSIS OF CHRONIC BONE LESIONS*

ARTHUR STEINDLER, M.D., Iowa City

In the classification of the chronic lesions of bones, one encounters very much the same difficulties which arise in establishing the identities of the chronic lesions of the joints. Much of this is due to the fact that a number of causative agents of widely different character may concur in creating reactive changes in the bones which are more or less uniform, so that the etiological divisions into distinct units often can not be carried out with any degree of exactness. For this very reason we are still adhering in chronic lesions to the distinction between atrophic and hypertrophic forms, although we know this to be a merely pathological point which does not bear a direct connection with the specific nature of infection.

In acute bone lesions it is of course much easier to establish the connection between the nature of infection and specific changes in the bone; bacteriological evidence is often obtainable

from the bone involved. But even in the case of osteomyelitis I shall be able to demonstrate to you that, as the chronic character of the trouble prevails, and time covers the tracks and the

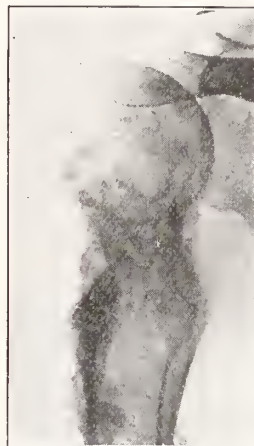


FIGURE 3—Round cell sarcoma of humerus.

origin of the infection, it becomes more difficult to recognize etiological entities in the clinical syndrome of these cases.

Nevertheless we can gain many points for the differential diagnosis by analyzing the pathological findings, especially if they are supported by most careful history. Previous infections, no matter how insignificant they might appear, should be carefully recorded. It is not uncommon that in infections of low virulence many months might elapse before the metastatic bone infection will rise from obscurity to present definite clinical symptoms. In typhoid fever not infrequently a longer time elapses between original infections and metastatic lesions of the spine. In syphilis there is hardly any time limit between the primary lesion and the establishment of syphilitic periostitis and syphilitic gumma. Hypertrophic osteoarthritis often follows after years' infection of the teeth or tonsils or upper air passages.

Another point to be carefully ascertained by the history is trauma, the influence of which upon chronic bone lesions is generally underestimated. In bone tuberculosis, Voss' statistics of 577 cases show that in 21 per cent. trauma was recorded in the history and in 7 per cent. of these a definite connection between the trauma and the tuberculosis was established. Pfenningsdorf, reporting on 160 cases of osteomyelitis, finds trauma in 41 per cent. in the history, in twenty-five of which he could ascertain direct causative connection. It is also known that trauma, especially of relatively mild character, is of influence in the occurrence of malignant

*Read before the Iowa State Medical Society, May 10, 1917.

tumors, especially sarcoma. It does not need to be mentioned that in all these instances trauma must be considered as a contributory cause, but it is nevertheless of great importance. Trauma as a principal cause of chronic bone lesions is among others known to exist in so-called post traumatic spondylitis of Kummell where it causes a molecular necrosis of the body of the vertebra, leading to deformity many months after the accident.

It is convenient from the pathological viewpoint to classify chronic bone lesions according

pathological basis of the different groups of chronic lesions of the bone.

Group A. Sarcoma—Most common next to the giant cell sarcoma is the round celled variety, the most malignant of all sarcomatous types. It

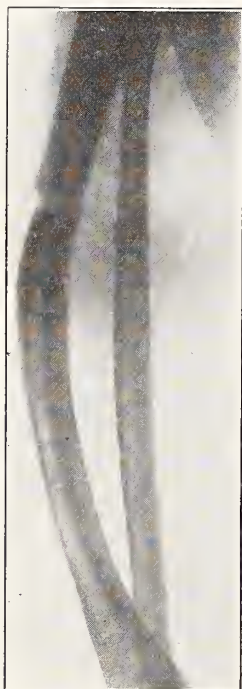


FIGURE 4—Rhachitic bone.

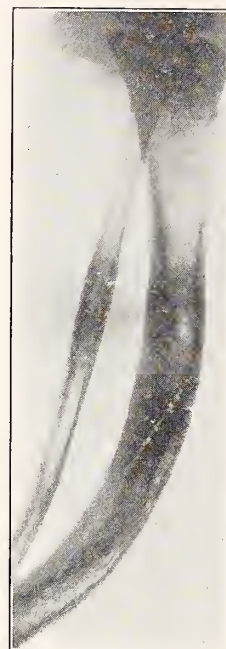


FIGURE 5—Rhachitic bone.

not infrequently follows trauma, usually a mild injury. Trauma severe enough to fracture the bone hardly ever gives rise to the development of a sarcoma. In the x-ray we note its enormous capacity of breaking down bone and other tissues and to grow wildly and without restraint.

Case 1 shows round celled sarcoma of the

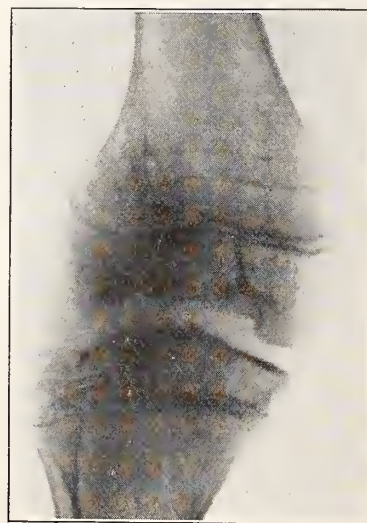


FIGURE 6—Osteomyelitis of femur and fibia.

to the amount of prevalence of, first, destructive changes; second, reparative changes.

The most destructive of all bone lesions are those of the sarcomatous type. They know no limits of growth and consume bone substance ruthlessly without any tendency to repair on the part of the bone; on the other hand, the lesions most active in bone producing are aside from certain bone tumors and some rare condition as leontiasis, etc., certain types of syphilitic lesions, which lead to considerable eburnation of bone.

Between these two extremes there are many conditions in which bone absorption and bone repair is being observed in great qualitative and quantitative variety. Since all these pathological elements can be readily recognized in the x-ray pictures of the lesion, the following series of x-ray pictures might well serve to illustrate the

femur a few months after the first symptoms appeared. It is of myelogenous origin and inoperable.

*The following cases, Figures 3, 4 and 5 are from the surgical service of Dr. C. J. Rowan.

Figure 3, a round cell sarcoma of the humerus. The enormous destruction of bone is evident from the rapid disappearance of the structure of the bone.

The carcinoma of bone is always secondary and follows with preference carcinomatous disease of



FIGURE 8—Perthes' disease.

the breast, the intestinal tract or of the uterus and adnexa. It involves most often the long bones or the spine. Unfortunately I am unable to demonstrate in my collection a case of this kind. In the x-ray picture the metastasis shows as a blurred spot in which the structure of the bone is cleanly wiped without leaving any traces.

Certain cystic degenerations of the bone are

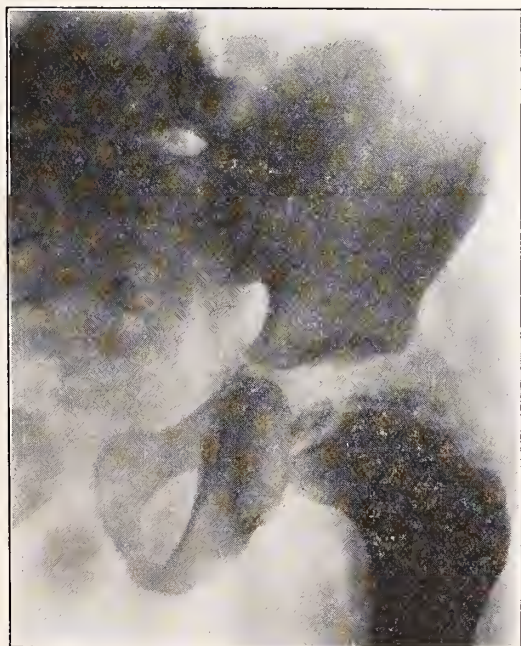


FIGURE 7—Perthes' disease.

very apt to present a picture similar to the less malignant types of sarcoma.

Under the name of fibrocystic osteitis or cal souffle, some French authors describe a juxta-epiphyseal lesion which simulates clinically tumors of the bone, but is not of neoplastic but rather of degenerative character. These lesions are slow in development and present themselves in the x-ray picture as clean cut cystic spots with smooth bone surroundings, showing no such inflammatory reaction in the periphery as is seen in bone abscesses in osteomyelitis; they show no regional atrophy as we see it in tuberculosis, nor do they show any hypertrophic thickening as seen in syphilis. Recklinghausen has described this disease as *ostitis fibrosa*. The pathological basis is a fibrous degeneration of the bone marrow, with subsequent breaking down of the bone tissue by the local osteoclasts and formation of cystic spaces. Most of the bone cysts, in as much as they do not belong to the group of giant-celled sarcoma, are considered to be due to *ostitis fibrosa*.



FIGURE 9—Syphilitic osteitis fibria (gumma).

A condition similar to this and not less obscure in origin is Paget's disease or *osteitis deformans*, which many consider to be a generalized form of *ostitis fibrosa*. A review of the 200 odd cases in the literature shows that the preponderance of this lesion is in males in the fifth decade of life, and that the disease is characterized by deformities in the long bones, especially in the tibia, accompanied by pain. Chemically there is a gain of inorganic and a loss of organic matter, a condition opposite to that in *osteomalacia*. The x-ray shows a distinct osteoporosis throughout the shaft of the bone together with very irregular thickening which would remind one of syphilis

or chronic osteomyelitis, were it not for the fact that the affection is general.

Rickets—Absorption of bone is a very evident feature of rachitic changes, notably in the epiphyseal line, which appears very much broadened and irregular in outline. In some instances these changes are so marked as to simulate those of congenital syphilis.

Syphilitic epiphysitis, which is the typical bone lesion in the first twelve months of life is an osteo-chondritis affecting the epiphyseal lines



FIGURE 10—Tuberculosis of hip.

and producing general enlargements, closely resembling those in rickets. Also the gummatous periostitis of the long bones, especially the tibia, produces deformities which in the clinical aspect are very similar to those found in rickets. A series of slides of ricketic lesions will demonstrate these points.

I call attention to the cupping of the epiphyses of the long bone. The depth of the line may be four or five times greater than normal and its width from side to side is also increased. It should be noted that in rickets the periosteum is also affected and that there is an excessive cell proliferation of the inner osteoblastic layer. This is of significance of the late result because the spongy osteoid bone which is laid down in considerable quantity, causes very often an astonishing eburnation of the bone which makes the bone much harder than normal. In rickets, therefore, destructive changes are frequently followed by an increased production of bone such as seen in infectious conditions and it may be considered from this viewpoint as a connecting link between degenerative and chronic inflammatory reactive bony conditions.

Osteomyelitis—Osteomyelitic changes vary essentially with the virulence of infection. The destructive as well as the formative stage may keep

in very moderate bounds where the infection is mild. For the sake of comparison, I am showing some slides of acute osteomyelitis, demonstrating the great bone destroying and bone producing capacity of this condition.

Figure 6 shows the following peculiar conditions. Osteomyelitic infection involved the posterior half of the head of the tibia. The pus therefore was extending through the posterior half of the knee joint by which route it gained the surface. Owing to this fact, diagnosis was probably delayed until part of the tibial head was destroyed with the result that a posterior subluxation of the tibia followed.

In this connection I wish to present the radiographs of two cases of a rather rare condition known as Perthes' disease or Osteochondritis Deformans Juvenilis. It is a very mild osteomyelitis in the epiphyseal head of the femur simulating tuberculous hip disease.

Acquired syphilis of the bone usually appears in either the localized gummatous form or as a diffused specific periostitis. It is the latter which causes the periosteal thickening of the bone. The lesions are usually painful to touch because of the involvement of the periosteum and because they are located in the more accessible



FIGURE 11—Tuberculosis of the tarsus.

long bones, especially the tibia. Syphilitic spondylitis usually involves the cervical spine and is characterized by stiffness and pain. The pain is distinctly osteocopic with characteristic nocturnal exacerbations.

In regard to the latter instance, I would like to mention a condition of infectious apophysitis of the tuberositas tibiae which is known in Schlatter's disease and which shows a similar frazzling of the bone in the x-ray picture. It is, however, a

staphylococcus infection, often upon traumatic basis.

The chapter of free-bodies or joint-mice should also be touched upon because of a certain class of these cases in which the free body is of bony origin. In these instances the underlying condition is an osteochondritis dissecans, a condition which has received more attention in the last few years. Following traumatic influences a certain portion of the outer surface of the inner condyle becomes necrotic and separates from the bone to finally become free body in the knee-joint.

Often free bodies of bony origin are found in osteoarthritis of the knee where they originate from bone spicula which are broken off their basis. In connection with osteomyelitis there should also be mentioned osteoperiostitic condi-

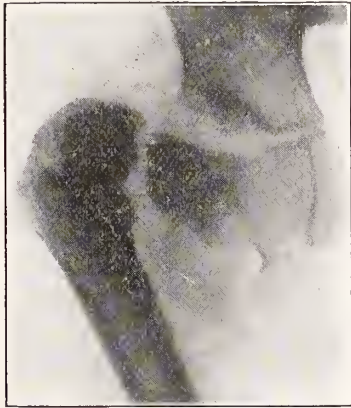


FIGURE 12—Intra-uterine fracture and coxa vara.

tion of pyogenic nature, which are well differentiated in the x-ray picture, owing to the distinct reaction of the periosteum and the zones of condensation around ulcerated parts of bone surface.

Spur formation is most frequently found in the os calcis where they may be of osteoarthritic, gonorrheal, or traumatic origin, or may be anatomical variations, in which latter instance one will find the architecture of the bone continued in the spurs.

Probably of greatest interest, on account of the frequency of incidence, is the x-ray diagnosis of tubercular bone lesions. The elements of destruction and absorption prevail entirely over those of bone reproduction, which is hardly ever found in the affected bone, yet occasionally we find evidences of bone production which might mislead in the diagnosis were it not for the clinical facts which in the last instance must be the decisive factor in the diagnosis. At any rate re-

productive changes occur late in the reparative stage and are never very extensive.

I wish to call attention to two forms of tuberculosis which are not so common as to make the diagnosis easy. In the first place the infiltrating form in cancellous bones which progresses rapidly and in which regional atrophy is enormous.

In the second place there is the diaphyseal tuberculosis to which form attention was called by Friedlander in 1904, and the existence of which has been and is still being denied. The form occurs occasionally in children in the diaphyses of the long bones. It is either a progressive infiltrating kind, or occurs in form of local infiltration with or without sequestrum.

In conclusion I should like to say one more word in regard to pathological fractures. They may follow tumors; sarcoma, carcinoma of the bones, ecainococcus and other cysts, and are often seen in severer cases of rickets. I am showing this instance of an intraterine fracture with severe coxa vara deformity which is a most unusual condition.

I am painfully aware that this collection of cases is most incomplete and inadequate for the purpose of giving a systematic exposition of the diagnostic elements in chronic bone lesions, and I ask you to be contented with a few diagnostic points which I have endeavored to set forth in this paper.

Discussion

Dr. M. J. Kenefick, Algona—This Society is to be congratulated upon securing such a paper from a man of Dr. Steindler's scientific turn of mind and clinical experience. I do not know why the chairman should ask a country doctor to tackle a subject like this. The author brings out an important point that appeals to me—the differentiation between the diagnosis of acute bone lesions and chronic bone lesions. It is in the handling of acute bone lesions that the country doctor shines. He sends those to the boneyard, and Dr. Steindler and Dr. Rowan don't see many of these cases. But when it comes to the diagnosis of chronic bone lesions we have more time then to scratch our heads and collect our sluggish thoughts, because this patient is not going to die today or tomorrow as some of our cases of acute osteomyelitis do if we don't get busy today. These cases walk into our offices and we have time to study them and to think them over, and we have time to bring into use all the modern diagnostic aids. Now, in many cases of acute osteomyelitis we are not equipped with laboratories to make the diagnosis, we are not equipped to make a Wassermann test, nor even with an x-ray. But in these cases of chronic bone lesions we have time and we can refer them, and we should be condemned if we do not refer them, to men competent to make the diagnosis,

because there is nothing that can be more destructive than neglected bone lesions, which are followed by such frightful deformities and disabilities when once the bony framework is destroyed. I cannot forget an incident that occurred while I was studying under Dr. Senn. A young surgeon who was ambitious to use his chisel and hammer, in Dr. Senn's absence chiselled out a case of syphilitic bone lesion, and then, not being satisfied with results, gave it another thorough clearing out; and when Dr. Senn came home and saw the case, he had one of his characteristic brain storms. A man is culpable when he takes a chisel and hammer to treat tertiary syphilis. If we can but keep in mind the two great chronic bone lesions, we shall cover quite a territory. The other forms are quite rare and we are not so much to blame if we pass them up. If we keep in mind these two classes, first the great white plague, tuberculosis, and, second, the great black plague, syphilis, we country doctors will have fewer failures in making a diagnosis of the chronic bone lesions.

Dr. Laura H. Branson, Iowa City—While I am interested in all bone lesions, yet that portion of the paper under discussion which refers to malignant tumors under degenerate types is of special import to me. The study of these malignant tumors in bone from the standpoint of metastasis alone, offers much food for thought. The inherent power of carcinoma, for instance, to metastasize into any tissue is an accepted fact; skeletal metastasis probably being the latest acquisition to our fund of knowledge along this line. This bone metastasis of malignant tumors is exceedingly slow in its development, and in its earlier stages it is extremely difficult of diagnosis because of the absence of all symptomatology. In the later stages of these metastatic deposits in the bone, pain may be said to be a pathognomonic symptom, and when pain occurs in any bone tissue during the life of a primary carcinoma elsewhere, the probability of metastasis must always be reckoned with. Right here the x-ray is of great assistance in confirming the diagnosis that we have made by the presence of pain; the x-ray throwing light upon what might be but a tentative diagnosis at best. Carcinoma occurring in bone tissue as secondary, does not always mean that the primary growth should be diagnosed as inoperable, for the fact that metastatic carcinoma in skeletal tissue is of very slow development furnishes a justifiable reason for removal of the primary growth. By so doing the individual's life may be prolonged for many years. Then the point I wish to make is that this one fact alone, the slow growth of malignant tumor in skeletal tissue, is of inestimable value not only in diagnosis, but in prognosis as well.

MARCHING FRACTURES

Captain A. Howard Pirie, Surgeon, in the *Lancet* for July 16th, gives a short account of this little noticed accident.

"The exact cause of a marching fracture seems to be the following. In the normal foot the arch of the foot is so constructed that the bulk of the weight of the body is transmitted through the stout first metatarsal. The next strongest bone is the fifth metatarsal, which takes the next largest share in bearing the weight of the body. By referring to the skeleton one sees that the second metatarsal is the weakest bone, the third and fourth following it in order of strength.

"When the arch falls down the weight of the body is distributed more equally to all the metatarsals, but the central ones being in more direct line with the astragalus get more than their share of the weight, and the second metatarsal being in direct line with the head of the astragalus gets the greatest proportion of the weight of the body. It receives more weight than it is constructed for, and under prolonged strain of long marching, when the soldier is carrying his full equipment, it gives way.

"When a person stands on his toes on one foot, the greatest breaking strain is near the head of the metatarsal bones, and this is the position in which the fracture occurs most frequently. It probably occurs when the man rises on to the toes of one foot to make a forward step with the other foot.

"In four of our cases the fracture occurred near the head and in two near the middle of the shaft.

"This fracture must be fairly common during the long marches made by our men, as these six cases have come to my notice in a series of 13,000 x-ray negatives."

THE PROVOCATIVE WASSERMANN REACTION

The California State Journal of Medicine notes a procedure utilized in the Skin Clinic of the Stanford University Medical School for several years:

"To a patient showing a negative Wassermann but still suspected of having a focus of the spirochetæ pallidæ in his system, a small intravenous injection (0.3 gramme) of salvarsan or neosalvarsan is given. If the organisms of lues are present, the spirocheticidal action of the drug will cause the liberation of substances which 'provoke' the appearance of a positive Wassermann reaction. It is best to examine the blood twenty-four hours and again forty-eight hours after the injection, for the great majority of positive cases show the reaction within forty-eight hours. Very shortly in most cases, the blood will become 'negative' again. By this means a doubtful reaction (plus minus) may be converted into a triple or quadruple plus reaction. This test is valuable also in 'latent' cases and in helping determine whether or not a patient is cured, and it may be of use in early cases where the physician cannot examine material from the ulcer with the dark field condensor. Of course the examination of serum from the sore with the dark field condensor is the most valuable means of making an early diagnosis, but in doubtful cases the 'provocative Wassermann' may help."

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa
T. B. THROCKMORTON, Business Manager.....Des Moines, Iowa

Publication Committee

T. B. THROCKMORTON, Secretary.....Des Moines, Iowa
W. L. BIERRING.....Des Moines, Iowa
F. W. PORTERFIELD.....Waterloo, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa
D. H. BOWEN.....Waukon, Iowa
T. E. POWERS.....Clarinda, Iowa

SUBSCRIPTION \$2.00 PER YEAR

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII February 15, 1918 No. 2

HEART LESIONS AND HEART MURMURS IN RELATION TO MILITARY SERVICE

While we are examining a large number of young men for military service, the question very naturally and properly arises as to how much significance should be given to heart murmurs, anemic, irritable or regurgitant. Until very recently we have associated heart murmurs with disease of that organ and have been inclined to condemn a patient suffering such symptoms, to a life of inactivity with a bad future outlook. Since the beginning of the war, when great numbers of young men have been called to the colors, and since soldiers have been invalided home on account of a condition known as "soldiers heart," great activity has developed in England among eminent physicians to determine the true significance of the not at all uncommon heart symptoms. Sir James Mackenzie, Sir Clifford Allbut, and Dr. Lewis have contributed much to the subject. Sir Clifford appears to think that the fundamental fact lies in whether or not an infection was the underlying cause of the heart disorder; if so, it is fair to presume that changes have taken place in or about the valves, even if complete compensatory changes in the heart muscles have taken place, which must lead to heart inefficiency in due time. It might be readily granted that for a considerable length of time after the heart disorder had developed from an infection, the heart muscle in a young person would be able to bear the stress of excessive activity, but it could not last as long as in a per-

fectly normal heart, and for that reason, such a heart could not be economically employed for a long service. It would thus appear that a recruit with heart symptoms having their origin in an infection, should not be accepted for active camp service, but might properly be accepted for restricted service if no secondary symptoms of heart inefficiency have developed. This would be wholly in accord with the Revised Regulations recently issued by the Provost Marshal General.

I have personally studied this question in relation to 2500 young men examined for the railway service, including brakemen, firemen, and switchmen, covering a period of about twenty-two years. When we began this work, there were a considerable number of young men who had been employed without an examination, and the condition of their hearts were not known until they came up for promotion, when it was found that a number of firemen and brakemen about thirty years of age, had valvular disorders with perfectly compensated hearts. The railway corporation was inclined to reject these men, but on recommendation their services were continued on condition that they report once in six months for re-examination, and agreed that as soon as a decompensation was apparent, their services were to be discontinued. All of these men are still in the service. One man in particular—a fireman—who passed to extra engineer, but served as fireman more or less for several years until he received an engine, and is now a locomotive engineer, has been examined by me some forty times in the past twenty years, is now fifty years of age, heart compensation perfect.

The evidence now before us fairly supports the contention that heart murmurs of a more or less irregular character, not attended with hypertrophic changes in the heart muscle, do not mean a heart disease and should not disqualify a young man for military service. The heart disorder known as "soldier's heart" so far as the evidence goes, does not appear to be a disease but a functional disorder, and while it may disqualify temporarily for military service, is not a ground for a permanent discharge. The existence of the so-called regurgitant mitral murmur, entitles the recruit to thoughtful consideration, but does not necessarily disqualify him for general service, but as Sir Clifford Allbut suggests, a long period general service might hasten the time for decompensation even if no marked hypertrophic change could be determined at the time of examination. We are clearly of the opinion that a fully compensated heart with a murmur, if there

is no marked enlargement, should not disqualify for a limited service, as contemplated under the new rules for selective service.

I am of the opinion, however, if the heart disorder can clearly be traced to an infection other than the so-called rheumatic infection, a different rule should apply, for an infection of a staphylococcic or streptococcic character may involve a myocardic change difficult to determine, and should disqualify for any service even if secondary symptoms are not particularly marked.

INDUSTRIAL INSURANCE

We hear many objections offered by the medical profession to industrial insurance. It is generally admitted that some plan will be adopted sooner or later, but that it will be altogether undesirable. We are confronted, however, with the question of securing compensation for services rendered working people, and are asking how can this be accomplished. It is generally admitted that the workingman has very little money which can be used for the purpose of paying for medical services, and the question comes up as to how can this be supplemented. Is it wise for a workingman to carry an insurance for the express purpose of paying medical fees? We are wondering how many men there are who would voluntarily carry an insurance to pay doctor bills. Then if workingmen will not carry an insurance to pay doctor bills, there must be some compulsory plan by which this can be accomplished, either in the form of state insurance or in the form of lodges which may be able to provide for a doctor bill on a contract plan such as has been seen in what is known as lodge practice. Medical practitioners have criticised industrial insurance; they have criticised lodge practice; they have criticised dispensary service; and at the same time feel that some plan should be adopted by which medical fees can be obtained for rendering service to working classes, but no one has offered a plan by which these same working people may be able to secure the necessary funds to pay for reasonable medical service.

To my mind there is only one plan which can be adopted that will secure for the doctor compensation for these services from the workingman whose entire wages are consumed in the ordinary expenses of living, and that is by creating a fund which shall be contributed to as provided for in some of the bills that have been presented for industrial insurance. As it seems to us, the medical profession should join in considering some plan which should enable the workingman to se-

cure good medical service and at the same time render reasonable compensation for such service, and there ought to be some agreement reached by the members of the various medical societies as to what would be a reasonable compensation. The question of conditions under which such service is rendered, must be taken into account, together with the freedom of the physician to accept or refuse service, and the tyranny under which such service may be rendered. It is a very well known fact that when medical service is offered free, there is scarcely any limit placed on the demands by a certain class of unthinking, ignorant and often-times autocratic employes.

THE MEDICAL SECRETARY AND LABORATORY ASSISTANT

We abstract from the Boston Medical and Surgical Journal an account of an experiment being tried at Simmons College, Boston. There appears to be a growing demand for young women properly trained as assistants to medical men not only as secretaries and stenographers, but capable of translating French and German and abstracting medical literature, filing, cataloging, etc.; also trained to do the routine chemical analysis of urine as well as the microscopic analysis of blood and sputum. This includes a college training of four years, the last year of which is devoted to training in stenography, typewriting, filing, cataloging, bookkeeping, etc. Several young women are to graduate from Simmons College this year. Many progressive physicians practicing in the smaller hospitals, have provided themselves with secretaries of the kind above mentioned, and as time goes on, more will seek such assistants. Of course a considerable proportion of medical practitioners will be content to go on in the old way, but they cannot expect to more than fill in the waste places. It will probably be true that many more will seek less accomplished secretaries but there will certainly be places for highly trained secretaries in the offices of the men who will guide medical thought. The movement inaugurated at Simmons College furnishes a highly interesting vocation for a class of young women whose educations and accomplishments fit them for responsible places.

INDUSTRIAL ACCIDENT MORTALITY IN AMERICA

The increased insecurity of life during the European War made itself felt in America dur-

ing 1916 and is seen in the mortality statistics compiled by the Metropolitan Life Insurance Company for their 9,000,000 white policyholders. The accident rate for the working classes of the United States in 1916 was found to have increased five points per 100,000 living over the rate for 1915, in contrast with the tendency in recent years toward a reduction in the fatal accident rate. The total rate of 73.5 (68.9) included traumatism by fall, 13.7 (12.4); accidental drowning, 9.5 (11.9); traumatism by automobiles, 8.8 (5.7); burns, 8.4 (8.1); traumatism by steam railroads, 7.6 (7.3); and other less frequent causes. The figures in brackets are the corresponding rate for 1915. Accidental drowning alone shows a decrease, chiefly due to the inclusion in 1915 of the deaths in the Eastland disaster. Mortality from automobile accidents and injuries showed by far the largest increase, being responsible indeed for three-fifths of the increase in the total accident rate in 1916. The company attributes the general rise to increased activity in industry and the speeding-up incident to war conditions. It is instructive to see this result proved by figures for a non-combatant country. Probably in every country of the world 1916 was a less safe year to live in.

ACTIVITIES OF THE COOPERATIVE MEDICAL ADVERTISING BUREAU

This bureau is issuing a February Bulletin on Electrical Apparatus and Radium, and this is intended to include x-ray coils and all kinds of instruments and apparatus operated by currents, even to healing diseases, for automobiles, electric sterilizers, electric signs, etc. This will give an opportunity for medical men who are interested in electrical apparatus, to examine the various devices for comfort and welfare and also for scientific aids in diagnosis and practice of medicine. The Cooperative Advertising Bureau is very careful to investigate the claims of all medical appliances and apparatus that are offered to the public, and when the Bureau has made proper investigations, it supplies the press with information that can be relied on. It is really a very helpful undertaking in medical welfare work and such as the profession ought to encourage. By following the recommendations of this Bureau, they will be saved the wasteful expenditure of certain sums of money. It is the purpose of this Journal to give suitable space to what would be of mutual interest to the profession and to the Bureau.

VIRGINIA MEDICAL MONTHLY

We have received the January number of the Virginia Monthly—formerly known as the Virginia Medical Semi-Monthly. In his report to the Medical

Society of Virginia, the secretary very wisely says: "Owing to the trend of the times and advances that are being made and that are practically demanded, we can no longer move along the lines of least resistance as heretofore and conduct the affairs of the State Society as in the past. We must develop, extend, and expand our influence along broader and more advanced lines. We must grow and keep pace with the profession in other states. It is to be hoped that in a few years the State Society will be in a position to establish and publish its own journal or adopt some journal as its organ, which, for the annual fee charged (and which most likely will have to be increased) will be sent to each member of the Society." We only regret that the oldest commonwealth and one which has contributed so much to the history of our country, is not in a position to join with Minnesota now.

MINNESOTA MEDICINE

After several years of heated discussion, the Minnesota State Medical Association has established a journal owned and controlled by the Association. We have for some years past read the discussions in the Minnesota House of Delegates—which are published in full—regarding an Association Journal. It was apparent that the sentiment was gaining in favor of a state controlled journal, and that the contract plan of publishing transactions would sooner or later end. The medical profession in Minnesota has reached high rank and there are so many great things in a medical way in that state that a journal of the first class full of the spirit of medical progress, appeared to be demanded. The Journal-Lancet is an able publication and has an honorable history behind it, and its able editor, Dr. Jones, is to be commended for the high character of his work. Since the first appearance of association medical journals, it has been apparent that journals fully controlled by the profession accorded better with the spirit of the medical profession than those organized as business propositions. It has been difficult for business to understand the sentiment that governs the medical profession, and when business ideas and professional sentiment have come together in medical journalism, there is something lacking.

We congratulate the Minnesota State Medical Association on the step it has taken in publishing its own journal. The first number of Minnesota Medicine is before us. It contains fifty-two pages of reading matter, double column, 8 x 11 page, on high grade paper. The mechanical work and arrangement of contents is admirable, and under its present management, it will do credit to the Minnesota profession. We most cordially welcome it to the growing family of association journals.

CHLOROMA

In the June number of The Journal of Laboratory and Clinical Medicine is an interesting review of

Chloroma by R. H. Boots, M.D., from the Pathological Laboratories of the University of Pittsburgh, eighty-five cases have been reported; the first by Allen Burns in 1823. Although he did not name the disease, his description of the case serves to identify it as one which has been included under this term. His case was one of greenish yellow tumor masses occurring about the bones of the head.

The author says:

"From the cases which have been described it would seem that the term is not entirely appropriate if the condition is to be regarded as a separate pathological entity, inasmuch as cases have occurred in which all of the clinical and pathological features ascribed to chloroma have been present except for the green color, and others where only some of the nodules, glands or blood clots showed the green color at autopsy.

"That the condition is always due to a primary involvement of the bone marrow is shown by the fact that in practically all cases in which the bone marrow was examined it was found altered; that the location of the tumor masses attached to the bones is always found in the short bones and those of the skull, in the marrow of which the hematopoietic function is still active; that the cells evidently have grown directly through the bones to form the masses, as the surfaces of the bones are eroded and the masses fairly well attached; and that the cells in a number of cases have been definitely proved to be myeloblasts and myelocytes since their protoplasm either showed granules by differential staining methods or oxydase granules upon application of the oxydase reaction.

"The blood picture of an acute leukemia, concomitant with chloroma shows the same type of cell which is predominant in the green tumor, as well as in sections of the bone marrow. Burgess states that the highest leucocyte count was 1,800,000 per cubic mm. In a few cases no increase of white blood cells was noted and for these forms the term 'aleukemic chloroma' or 'chloromatous pseudoleukemia' was suggested. However, there is not sufficient evidence to introduce this terminology as indicating a distinct type of disease.

"Although the terminology is confusing, it would seem that when the term chloroma is used, a type of leukemia is referred to in which there is the formation of green masses of immature white blood cells. The leukemia is probably always myelogenous in character and is due to a primary hyperplasia of the red bone marrow."

PRIMARY CARCINOMA OF THE URETER

E. C. Schmidt in *The Journal of Cancer Research*, reviews the twenty cases of primary carcinoma of the ureter—including two of his own—reported in the literature.

Of the twenty cases here tabulated the sexes

are equally represented numerically. The average age is 55.8 years, that for the female being slightly lower, 54.3 years. The youngest patient was a woman of 36; the oldest, a woman of 80. Most of them are accidental findings at autopsy, a few are diagnosed clinically.

The symptomatology gives rise to a few interesting points; the onset of the trouble was invariably insidious and painless, the first evidence being usually a swelling in the abdomen noticed by the patient, which is generally attributable to a hydronephrosis due to ureteral obstruction. Hematuria takes place almost without an exception and may be intermittent or continuous and extend over a period of years. Pain is often severe and intense, but appears late in the course of the disease.

No very satisfactory conclusions as regards the etiology of these tumors can be drawn from the table. In four cases calculi were found; in two other cases calculi were suspected to have been present at some time antedating the trouble. When present, they occur, as pointed out by Spiess, at one of three anatomical regions of the ureter, viz. at its origin, at the angle where it crosses the linea innominata and at the narrowed portion before entering the bladder.

Operations were performed on ten patients with three recoveries. These were done either for exploratory purposes, thus helping to establish a diagnosis by removal and examination of the pathological tissues, or for removal to relieve pain. Death in a few cases was immediately postoperative, in the remainder it was due to exhaustion.

All these cases, except the three recoveries where the lesion did not extend beyond the ureteral musculature, showed quite extensive infiltration and often necrosis of the surrounding tissues. Metastases occurred in nearly all the cases, the lung and liver frequently being the seat of these secondary growths. One case showed tumor thrombi in the neighboring blood-vessels, while most of them showed metastases in regional lymph glands, and tumor nodules and thrombi in the lymph vessels draining the part. Of the cases reported as recoveries it was too early to state at the time reported whether there was a recurrence, although one patient, that of Chiari, was well one year after the operation.

EXPENSES OF JOURNAL AND MEDICO-LEGAL, NEW YORK STATE MEDICAL SOCIETY

Dr. Alexander Lambert presents some interesting figures showing the expenses of the New York Medical Society 1908-1916 inclusive.

The New York State Medical Society publishes a directory which costs from \$5,016.87 to \$7,631.85 per annum, pays the expenses of the delegates to the A. M. A. which costs the Society from four to nine per cent. of all the expenses.

	Expense of	Total Expenditures	Percentage
1908—			
Journal	\$2,916.16	\$18,791.33	16
Legal	3,000.00	18,791.33	16
1909—			
Journal	2,320.71	16,851.02	14
Legal	3,000.00	16,851.02	18
1910—			
Journal	3,514.23	21,375.16	16
Legal (includes \$1,000 honorarium	4,590.79	21,375.16	21
1911—			
Journal	4,553.29	20,837.87	22
Legal	3,613.13	20,837.87	17
1912—			
Journal	5,859.82	23,246.88	25
Legal	3,898.78	23,246.88	17
1913—			
Journal	4,449.58	21,758.36	20
Legal	4,952.58	21,758.36	23
1914—			
Journal	5,763.13	24,531.58	24
Legal	6,522.50	24,531.58	27
1915—			
Journal	2,959.31	23,557.39	13
Legal	6,727.45	23,557.39	29
1916—			
Journal	4,129.80	24,463.66	17
Legal	6,966.67	24,463.66	28

DR. CLEMENCEAU

The famous statesman, now Prime Minister of France, practiced medicine in Stanford, Conn., and in New York City from 1865 to 1869, occupying a house on West Twelfth street. It does not appear that he was a success as a physician; he became an instructor of the French language and literature in Miss Aikens Young Ladies Seminary at Stanford, Conn. He married Miss Mary Plummer of Springfield, Mass., a pupil attending the seminary, and returned to France in 1870, where he soon became prominent in politics. Clemenceau was born in 1841, the son of a physician, and received his license to practice medicine in 1865.

DR. RAMON GUITERAS

Dr. Ramon Guiteras of New York, died at French Hospital, New York, December 13, 1917. Dr. Guiteras was the son of a Cuban patriot; was born in Bristol, Rhode Island; was graduated from Harvard University in arts and in medicine; studied in Paris, Vienna and Berlin. Dr. Guiteras entered the United States Navy as assistant surgeon. After resigning, became interne in the city hospital, and later became assistant professor of laryngology at Columbia; of neurology at the University of New York, and of dermatology at the New York Polyclinic; later professor of surgery, Post-Graduate Medical School; was attending surgeon of several

hospitals. Dr. Guiteras was the author of the first book on urology published in the United States.

Dr. Guiteras will be remembered by American doctors who attended the meetings of the Pan-American Medical Congress, for his charming personality and his helpfulness in making the sessions profitable and interesting. He served many years as secretary of the Congress. Besides being a skillful and versatile surgeon and linguist, he was an athlete and greatly enjoyed pugilistic sports, and as he stated to the writer, he had umpired many a prize fight. I had the good fortune to meet him several times in his home at New York, last in June, 1917, at the meeting of the American Medical Association, when he served his turn on the entertainment committee. We feel in the death of Dr. Ramon Guiteras a personal loss.

A donation of one hundred thousand dollars was forwarded a short time ago to His Majesty the King by Major W. Napier Keefer, M.D., of Toronto, late I.M.S., to be put to whatever use His Majesty might deem most suitable. The money has been allocated in the following way; two thousand pounds to the Star and Garter Home for Paralyzed Soldiers; two thousand pounds to the Nurse Cavell Homes; one thousand pounds to the Auxiliary Officers' Consumption Hospital; five hundred pounds to the Prisoners' War Fund; two thousand pounds for orthopedic treatment; and two thousand pounds for the treatment of deaf soldiers. Major Keefer entered the I.M.S. on October 1, 1869, and retired on December 18, 1889. He was for many years medical officer of the 13th Bengal Lancers, and afterwards chief medical officer of the Andaman Islands. He served with distinction in several campaigns in India and in Egypt.

DAMAGES FOR FAILURE TO REMOVE GAUZE AND PORTION OF TUBE

(Baer vs. Chowning [Minn.], 161 N. W. R. 144)

The Supreme Court of Minnesota affirms an order denying a motion made by the defendant for judgment or a new trial, after a verdict for \$2,500 had been rendered in favor of the plaintiff. The court says that the plaintiff's right to recover damages was limited to negligence in leaving a gauze pack or sponge and a portion of a rubber drainage tube in her body. There were no other claims of negligence. It was not claimed that the defendant was unskillful or negligent in the performance of the operation. The evidence was that, August 14, 1914, the defendant performed an abdominal operation on the plaintiff. Two incisions were made, one in front and one in the side. The one in the side did not heal. A fistulous opening developed. July 14, 1915, another surgeon performed an operation. He found in the abdominal cavity, according to his testimony, a gauze pack or sponge which had been used in the operation and a portion of a rubber

drainage tube. This testimony made the question of the defendant's negligence for the jury. With regard to the amount of the verdict: The plaintiff's suffering had been severe. She had been incapacitated from work. If her testimony and that of others was credited, she was still in bad health and in a nervous and enfeebled condition and far from well. There was no direct testimony that her suffering or her condition resulted from the leaving of the pack and the tube in the body. It was a matter of fair inference for the jury. As soon as they were removed, the wound healed and pains became less. Perhaps the verdict was large. This court cannot say that it was excessive.—(The Journal of the American Medical Association.)

IOWA MEDICAL MEN IN THE WAR

To Aberdeen, Md., for duty, from Fort Oglethorpe, Lieut. Milton J. Freeman, Carroll.

To Boston, Mass., for instruction, and on completion to his proper station, from Camp Upton, Lieut. Leo. A. Goodman, Dubuque.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. George W. Frank, Sunbury.

To Camp MacArthur, Waco, Texas, for duty, Capt. Ben S. Walker, Corydon.

To Chicago, Ill., for instruction, and on completion to his proper station, from Camp Dodge, Capt. Francis J. Savage, Des Moines.

To Fort Oglethorpe, Evacuation Hospital No. 7, from Fort Riley, Lieut. John A. Matson, Purdy.

To Fort Riley, for instruction, from Chicago, Lieuts. Milton A. Given, Des Moines; Judd C. Shellito, Independence; for duty, from Fort Riley, Lieut. Frederick H. Lamb, Davenport; for instruction, from Kansas City, Lieut. John R. Christensen, Eagle Grove.

To his home and honorably discharged on account of being physically disqualified for active service, Capt. George M. Johnson, Marshalltown.

To Boston, Mass., Harvard Medical School, for instruction in orthopedic surgery, Capt. Edwin E. Hobby, Iowa City.

To Camp Cody, Deming, N. M., base hospital, from Fort Riley, Lieut. George J. Wenzlick, Iowa City.

To Camp Doniphan, Fort Sill, Okla., to examine the command for mental and nervous diseases, from Camp Doniphan, Capt. Thomas J. Heldt, Cedar Rapids; for duty, from Fort Riley, Lieut. Raymond A. Seiler, Blainstown.

To Camp Joseph E. Johnston, base hospital, from Fort Riley, Lieut. Snyder D. Maiden, Council Bluffs.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieut. William H. Thomas, McGregor.

To Camp Shelby, Hattiesburg, Miss., to examine the command for mental and nervous diseases, from Washington, D. C., Lieut. Percy B. Battey, Independence.

To Dayton, Ohio, Wilbur Wright Station, Aviation Supply Depot, McCook Field, from Montgomery, Ala., Lieut. Roscoe D. Taylor, Spencer.

To Fairfield, Ia., for duty, from Fort Riley, Lieut. Roy A. McGuire, Brighton; Jefferson County Hospital, Lieut. Frank R. Mehler, New London.

To Fort Oglethorpe, for instruction, Capt. Charles F. Smith, Des Moines; from Camp Dodge, Capt. Francis LaPisana, Des Moines; from Philadelphia, Lieuts. Thomas E. Thomsen, Charter Oak; Thomas R. Gittens, Iowa City.

To Fort Riley, for instruction, Lieut. Elmer P. Weih, Clinton; Evacuation Hospital No. 1, for duty, from Fort Riley, Lieut. Leo E. Shafer, Walcott.

To Philadelphia, Pa., for intensive training, Capt. Samuel C. Lindsay, Independence; Lieut. Fisher B. E. Miller, Cherokee.

To his home and honorably discharged on account of being physically disqualified for active service, from Fort Riley, Lieut. Thomas W. King, Maloy.

To Camp Fremont, Palo Alto, Calif., for duty as sanitary inspector, from Fort Riley, Capt. Russell M. Young, Red Oak.

To Charleston, S. C., Sixty-First Artillery, from Fort Oglethorpe, Lieut. Arthur C. Strong, Burlington.

To Edgewood, Md., the American Milling Plant, from Aberdeen, Md., Lieut. Milton J. Freeman, Carroll.

To Fort Sam Houston, Texas, for assignment to duty, from Fort Oglethorpe, Lieut. Elmer A. Carberry, Maynard.

To Jackson Barracks, New Orleans, La., for duty, from Fort Oglethorpe, Lieut. Charles B. Rentz, Hornick.

To Rochester, Minn., for instruction, and on completion to his proper station, from Camp Dodge, Lieut. Gerald V. Caughlan, Pacific Junction.

To San Francisco, Calif., Sixty-Fifth Artillery, from Fort Riley, Capt. Leroy A. Westcott, Cherokee; Sixty-Second Artillery, from Fort Riley, Lieut. Franklin J. Drake, Webster City.

To South San Antonio, Texas, for duty, Lieuts. Murdock Bannister, Ottumwa; Otto J. Blessin, Postville.

To Camp Cody, Deming, N. M., base hospital, from Fort Riley, Lieut. Frederick H. Lamb, Davenport.

To Camp Doniphan, Fort Sill, Okla., for duty, from Fort Riley, Capt. Albert E. Conrad, Decorah.

To Camp MacArthur, Waco, Texas, for duty, Capt. Thomas L. Long, Woodward.

To Dallas, Texas, Aviation School, Love Field, for duty, from Fort Riley, Capt. William T. Daly, Cresco.

To Fort Oglethorpe, as commanding officer of Convalescent Camp No. 2, from Fort Oglethorpe, Capt. Valentine J. Meyer, Defiance.

To Fort Riley, instruction, Lieut. Arthur L. Druet, Larchwood.

To San Antonio, Texas, Kelly Field, for duty,

Capt. Elmer R. Park, Sioux City; Lieut. Jesse C. Ross, Des Moines.

To his home and honorably discharged, Lieut. William H. Betts, Madrid; on account of being physically disqualified for active service, Lieut. Dean W. Harman, Readlyn.

Capt. Thomas L. Long, assistant surgeon at the State Hospital and Colony for Epileptics, Woodward, has been ordered to Camp McArthur, Texas, as surgeon in the Aviation Corps.

Lieut. H. H. Gallatin, of Ft. Madison, has been ordered to report to Ft. Riley for training.

Lieut. L. H. Fritz, of Dubuque, now in France, has been promoted to the rank of captain.

Lieut. Ben T. Whitaker, of Boone, has been ordered to Fort Riley for training.

Lieut. Frederick L. Wahrer, of Ft. Madison, has been ordered to the base hospital at Camp Gordon, Georgia for duty.

Capt. William L. Hearst, of Cedar Falls, has been ordered to Fort Riley for training, also Capt. Charles B. Taylor of What Cheer.

Capt. Evarts A. Graham, of Mason City, has been ordered to the Presbyterian Hospital, Chicago, for instruction.

Capt. E. A. Bare, of Pleasantville, is in the medical reserve corps service at Ft. Snelling.

*Souvenirs de Noel 1917, et de la Celebration
au Lieutenant-Colonel David Fairchild*

Supplement to list of Iowa physicians who have been recommended by the Surgeon-General for commissions in the Medical Officers' Reserve Corps.

Jefferson Duddleston Blything, Capt., Bettendorf.
William Leighton Griffin, 1st Lieut., Charles City.
Charles Earl Block, 1st Lieut., Davenport.
Walter Edward Foley, 1st Lieut., Davenport.
James Thomas McBride, 1st Lieut., Des Moines.
Guss Bross Young, 1st Lieut., Des Moines.
Edward Harvey White, 1st Lieut., Dubuque.
Edward Francis Beeh, 1st Lieut., Fort Dodge.
John Raphael Gardner, Capt., Lisbon.
Evarts Ambrose Graham, Capt., Mason City.
George Earl Hermence, 1st Lieut., Marshalltown.
Colin Gaudens Thomas, 1st Lieut., Monticello.
Leo Erwin Evens, Capt., Waterloo.

NAVY'S CALL FOR BINOCULARS, SPY-GLASSES AND TELESCOPES—"THE EYES OF THE NAVY"

January 14, 1918.

Dear Sir:

The Navy is still in urgent need of binoculars, spy-glasses and telescopes. The use of the sub-

marine has so changed naval warfare that more "EYES" are needed on every ship, in order that a constant and efficient lookout may be maintained. Sextants and chronometers are also urgently required.

Heretofore, the United States has been obliged to rely almost entirely upon foreign countries for its supply of such articles. These channels of supply are now closed, and as no stock is on hand in this country to meet the present emergency, it has become necessary to appeal to the patriotism of private owners, to furnish "EYES FOR THE NAVY."

Several weeks ago, an appeal was made through the daily press, resulting in the receipt of over 3,000 glasses of various kinds, the great majority of which has proven satisfactory for naval use. **This number, however, is wholly insufficient, and the Navy needs many thousands more.**

May, I, therefore, ask your cooperation with the Navy, to impress upon your subscribers, either editorially, pictorially or in display, by announcing in addition to the above general statement, the following salient features in connection with the Navy's call:

"All articles should be securely tagged giving the name and address of the donor, and forwarded by mail or express to the honorable Franklin D. Roosevelt, assistant secretary of the Navy, care of Naval Observatory, Washington, D. C. so that they may be acknowledged by him.

"Articles not suitable for naval use will be returned to the sender. Those accepted will be keyed, so that the name and address of the donor, will be permanently recorded at the Navy Department, and every effort will be made to return them, with added historic interest, at the termination of the war. It is, of course, impossible to guarantee them against damage or loss.

"As the Government cannot, under the law, accept services or material without making some payment therefor, one dollar will be paid for each article accepted, which sum will constitute the rental price, or, in the event of loss, the purchase price, of such article."

Toward the end of January, it is proposed to distribute throughout the country, posters making an appeal to fill this want of the Navy.

As this is a matter which depends entirely for its success upon publicity, I very much hope that you will feel inclined to help the Navy at this time by assisting in any way that lies within your power.

Very sincerely yours,

FRANKLIN D. ROOSEVELT,
Asst. Sec'y of the Navy.

RED CROSS REORGANIZES WORK

It is just in this feature of reserve supplies ready for an emergency of any size that the Red Cross is practically revolutionizing the work. Formerly, when

the Paris bureau was entirely dependent on current contributions, the question always was, "Can we do it?" Hospitals sometimes had to wait. There were occasions when the bureau had only 200 francs in the bank, with always the chance of an emergency breaking. Now the Surgical Dressings Service has assured backing. It can add to its workers when a press comes. It can draw on material without limit. And, more important still, it can do what has never been attempted before, build up reserves commensurate with any possible demand. A minor but intensely practical reform plays directly into this large scale planning. The new Red Cross rules call for shipments of bandages, gauze, etc., only in case lots, which will not have to be opened and resorted in Paris.

REPORTING OF ACCIDENTS FROM LOCAL ANESTHETICS

To the Editor—The Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association has undertaken a study of the accidents following the clinical use of local anesthetics, especially those following ordinary therapeutic doses. It is hoped that this study may lead to a better understanding of the cause of such accidents, and consequently to methods of avoiding them, or, at least, of treating them successfully when they occur.

It is becoming apparent that several of the local anesthetics, if not all of those in general use, are prone to cause death or symptoms of severe poisoning in a small percentage of those cases in which the dose used has been hitherto considered quite safe.

The infrequent occurrence of these accidents and their production by relatively small doses point to a peculiar hypersensitiveness on the part of those in whom the accidents occur. The data necessary for a study of these accidents are at present wholly insufficient, especially since the symptoms described in most of the cases are quite different from those commonly observed in animals even after the administration of toxic, but not fatal, doses.

Such accidents are seldom reported in detail in the medical literature, partly because physicians and dentists fear that they may be held to blame should they report them, partly, perhaps, because they have failed to appreciate the importance of the matter from the standpoint of the protection of the public.

It is evident that a broader view should prevail, and that physicians should be informed regarding the conditions under which such accidents occur in order that they may be avoided. It is also evident that the best protection against such unjust accusations, and the best means of preventing such accidents consist in the publication of careful detailed records when they have occurred, with the attending circumstances. These should be reported in the medical or dental journals when possible; but when,

for any reason, this seems undesirable, a confidential report may be filed with Dr. R. A. Hatcher, 414 East Twenty-Sixth street, New York City, who has been appointed by the committee to collect this information.

If desired, such reports will be considered strictly confidential so far as the name of the patient and that of the medical attendant are concerned and such information will be used solely as a means of studying the problem of toxicity of this class of agents, unless permission is given to use the name.

All available facts, both public and private, should be included in these reports, but the following data are especially to be desired in those cases in which more detailed reports cannot be made:

The age, sex, and general history of the patient should be given in as great detail as possible. The state of the nervous system appears to be of especial importance. The dosage employed should be stated as accurately as possible; also the concentration of the solution employed, the site of the injection (whether intramuscular, perineural or strictly subcutaneous), and whether applied to the mouth, nose, or other part of the body. The possibility of an injection having been made into a small vein during intramuscular injection or into the gums should be considered. In such cases the action begins almost at once, that is, within a few seconds.

The previous condition of the heart and respiration should be reported if possible; and, of course, the effects of the drug on the heart and respiration, as well as the duration of the symptoms, should be recorded. If antidotes are employed, their nature and dosage should be stated, together with the character and time of appearance of the effects induced by the antidotes. It is important to state whether antidotes were administered orally, or by subcutaneous, intramuscular or intravenous injection, and the concentration in which such antidotes were used.

While such detailed information, together with any other available data, are desirable, it is not to be understood that the inability to supply such details should prevent the publication of reports of poisoning, however meager the data, so long as accuracy is observed.

The committee urges on all anesthetists, surgeons, physicians and dentists the making of such reports as a public duty; it asks that they read this appeal with especial attention of the character of observations desired.

TORALD SOLLMANN, Chairman.

R. A. HATCHER, Special Referee.

Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the Amer. Med. Ass'n.

During November the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Farbwerke-Hoechst Co., New York.
Salvarian.

Borcherdt Malt Extract Co.
Borcherdt's Malt Sugar.

BOOK REVIEWS

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS

By George W. Norris, M.D., Assistant of Medicine in the University of Pennsylvania; and Henry R. M. Landis, M.D., Assistant Professor of Medicine in the University of Pennsylvania; With a Chapter on the Electrocardiograph in Heart Disease by Edward B. Krumbharr, Ph.D., M.D., Assistant Professor of Research Medicine in the University of Pennsylvania. Octavo Volume of 782 Pages With 413 Illustrations. W. B. Saunders Company, 1917. Cloth \$7.00 Net; Half Morocco \$8.50.

The voluminous work before us presents some features of special interest to the practitioner of internal medicine and is worthy of exhaustive study. The first chapters point out the facts in diagnosis which are primarily to be considered in examining the chest; inspection, palpation, percussion and auscultation, including the acoustics in physical diagnosis, the theory of percussion and the methods of auscultation. Then comes a consideration of breath sounds and voice sounds; the modifying considerations in infants and young children.

Part second takes up in detail the examination of the circulatory system by ordinary physical methods and with instruments of precision. A chapter is devoted to the use of the electrocardiograph and its value from present knowledge; also a chapter on blood-pressure studies. The study of methods of diagnosis includes 255 pages and 218 illustrations.

Part three gives an account of the diseases of the bronchi, lungs, pleura and diaphragm.

Part four takes up diseases of the pericardium, heart and aorta.

The author entertains a doubt as to the value of x-ray examinations in the diagnosis of tuberculosis of the lungs, and generally prefers other methods, and believes in fact that x-ray examinations in diseases of the chest have a considerable value in only a few conditions. Professor Norris relies mainly in diagnosis of diseases of the chest, on a painstaking employment of the methods long in use and which have borne the test of time. We are fully in sympathy with the author's views, and can most heartily recommend the book to the general practitioner who desires to pursue safe and sound methods.

NEUROSYPHILIS, MODERN SYSTEMATIC DIAGNOSIS AND TREATMENT

Presented in One Hundred and Thirty-Seven Case Histories. By E. E. Southard, M.D., Sc.D., Bullard Prof. of Neuropathology, Harvard Medical School; Director

Psychopathic Department, Boston State Hospital; etc., and H. C. Solomon, M.D., Instructor in Neuropathology and Psychiatry, Harvard Medical School; Acting Chief-of-Staff, Psychopathic Department, Boston State Hospital; etc. With an Introduction by James Jackson Putnam, M.D. Octavo, 500 Pages, With 25 Full Page Illustrations, \$5.00. Boston, W. M. Leonard, Publisher, 1917.

The book before us is one of great value in that it brings up a series of clinical cases systematically and analytically studied, of syphilis of the nervous system, arranged according to the plan used by Cabot in his *Differential Diagnosis*. One hundred and thirty-seven cases are studied in detail at the Psychopathic Department of the Boston State Hospital. These cases mostly relate to the late manifestations of syphilis on the nervous system, both inherited and acquired. Particular attention is called to latent neurosyphilis being called into activity under the stress of exposure and hardship. It has been found that war conditions are especially hazardous in bringing out neurosyphilis in soldiers infected prior to enlistment, and after the war, neurosyphilis from infection during the war. Hecht of Austria claims that an equivalent of sixty army divisions have been temporarily withdrawn from the front of the Teutonic side for venereal disease during the war, and has recommended that salvarsan and mercury treatment should be given in the trenches. We may infer from the authors that neurosyphilis will become one of the great problems after the war. There are many questions of medico-legal interest brought out, in which a remote syphilitic infection has developed some form of neurosyphilis under the stress of some great mental or physical shock, and cites instances derived from the present war and other catastrophes.

This work should be regarded as a contribution to knowledge.

THE ROCKEFELLER FOUNDATION

Annual Report, 1916. Published by the Rockefeller Foundation, 61 Broadway, New York.

This publication is a report of the various activities of the Rockefeller Foundation in promoting public health in various parts of the world. An account is given of the International Board of Health, the China Medical Board War Relief, Promotion of Medical Education and Medicine and Public Health. A general summary is given of the activities of the International Health Board in the southern states and other countries. Through the reports published, an idea may be obtained of the extent of the work accomplished by the Rockefeller Foundation in making life safe and comfortable in sections of the United States and in tropical countries with which we have more or less intimate

commercial relations, and in the interest of humanity in general.

THE MODERN MILK PROBLEM IN SANITATION, ECONOMICS AND AGRICULTURE

By J. Scott MacNut, Lecturer on Public Health Service in the Massachusetts Institute of Technology. The MacMillan Company, New York, 1917. Price \$2.00.

This book supplies practical information as to the control of the milk supply, together with the various means and needs for sanitary supervision, both in the laboratory and in the field as well as the economic factors. The grading of milk supplies in both large and small communities is given special attention.

The value of this volume is not confined to the medical practitioner but to all classes of lay readers as well. The problem is not altogether a medical problem but one which should appeal to every person interested in milk; to the producer; to the dealer and to the consumer above all. We sincerely trust the book will come into the hands of a wide range of readers.

AN INTERMEDIATE TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY WITH EXPERIMENTS

By C. J. V. Pettibone, Ph.D., Assistant Professor of Physiological Chemistry, University of Minnesota. C. V. Mosby Co., 1917. Price \$2.50.

The work is in two parts, the theoretical, covering the composition of the body, the carbohydrates, fats and proteins, digestion, the urine, absorption and metabolism; and the second, laboratory experiments on the same subjects. While the treatment of the subject matter is intentionally not exhaustive, the selection of material is good and the method of presentation is clear. The directions for the laboratory work show that they have not been merely copied from other books but that they are the result of experience with classes of students. Presumably if used as a manual in medical schools it would be supplemented by lectures and if so used it appears to be well suited to the purpose for which it was prepared.

E. W. Rockwood, M.D.

MANUAL OF LABORATORY DIAGNOSIS

By Stella M. Gardner, M.D., and Mary C. Lincoln, Ph.B., M.D., Formerly Assistant Professors of Laboratory Diagnosis, College of Medicine, University of Illinois. Chicago Medical Book Co., Price \$1.25.

This book treats the subject of the clinical examination of blood, urine, stomach contents, feces, human milk, spinal fluid and sputum. The Wasserman reaction is discussed and the technic of the test given in detail. The chapter on bacteriology gives practical methods of examination and diagnostic

characteristics and significance of the important pathogenic bacteria.

The diagnostic significance of findings is presented in tables or brief discussions, a feature seldom included in small handbooks.

CONSERVATION OF VISION

We have received a series of papers on the above subject from Frank Allport, M.D., Chicago, including not only conservation but also a review of legislation concerning Ophthalmia Neonatorum and Optometry. These papers are not only interesting to the medical profession but also to the public in general, and should be widely read by those in official and legislative positions who are in any way related to public health matters.

MANAGING A TUBERCULOUS HERD

Agricultural Experiment Station, Iowa State College of Agriculture and Mechanic Arts. Also from the Iowa Agricultural Experiment Station, Dairy Section, on Soft Cheese Making.

In this paper there is a comparative estimate of the food value of soft cheese and beef and pork products which is not only interesting but valuable at this time, and always in considering the question of food conservation.

PUBLIC HEALTH REPORTS

Issued by the United States Public Health Service. November and December, 1917. Government Printing Office, Washington, D. C.

BEWARE OF SWINDLERS

No doubt you may have seen the several notices, under "General News" in the Journal A. M. A. in several recent issues, entitled "Once more a warning." These refer to swindlers operating in different sections of the country—various letters having been received from victims in Ohio, Colorado and other widely separated states. Now comes a letter from the well-known publishing house of W. B. Saunders Co. of Philadelphia, saying a man under the name of E. T. Rogers, claiming to represent the University Progressive Club of Cincinnati, for medical and other journals, has been victimizing physicians in Illinois; and the same subscription swindler, or another under the name of Robert Wayne, has been relieving physicians of their well earned cash in the region of Gary, Ind. It is believed there is concerted action, perhaps by an organized band, being taken at this time of the year, to victimize physicians on so-called "subscription" schemes. Every physician should decline to pay any money by check, or otherwise, to subscription agents not personally known to him, or for whom other physicians can not vouch. Many of these so-called agents operate under the guise of students "working their way through college."

CONCERNING THE DUES OF WAR MEMBERS

During the past weeks the office of the secretary of the Iowa State Medical Society has received numerous inquiries from secretaries of various county medical societies throughout the state regarding the status of members now in the medical service of the government, whether such members should be obliged to pay their dues or whether the Iowa State Medical Society could remit the dues of any member now in the service.

In reply to so general an inquiry concerning the dues problem, now under consideration, the secretary of the State Society begs leave to call to the attention of the secretaries of the component county medical societies, as well as of the members, that the power to fix the amount of dues is vested in the House of Delegates, which body alone has the power to increase, decrease, or remit the dues of the membership of the Iowa State Medical Society.

No action was taken by the House of Delegates at the last annual meeting concerning the dues of any member of the State Society joining the colors. Hence it remains, either for the individual member himself to pay his dues, or for the local county medical Society, of which he is a member, to do so for him. The latter plan appears to be the one most justifiable and is the one which has been inaugurated by several of the county medical societies, to-wit: Lee, Dubuque, Dallas-Guthrie, Adams, Ida, Polk, and others.

Where the membership of the county society is large, or where the per cent. of the enlisted members is small, no apparent hardship is imposed on the members remaining at home. On the contrary, it is only natural to assume that the members who do not enter the medical service of the government are, after all, profiting by the business left them by the physicians who do enter the government service and, therefore, it would seem to be not only a fair thing for a county society to do, but a gracious one as well, to pay the dues of any war members and thus acknowledge their sense of appreciation towards their professional brothers who are making such a sacrifice that the world may be safe for democracy.

It is impossible for organized medicine to exist without funds, and the funds of the State Society depend absolutely upon its membership and their support of the Journal. For this reason, let every effort be made not only to retain the present membership of the Iowa State Medical Society but to increase the number of its members wherever possible.

A CORRECTION

In the report of the officiator for the Poweshiek County Medical Society, as given in the January issue of the Journal, Dr. C. E. Harris is reported as the secretary and delegate. The name should have been Dr. E. E. Harris. Dr. C. E. Harris, of Grinnell, the former secretary, is temporarily located at Woodmen, Colorado.

SOCIETY PROCEEDINGS

The Cass County Medical Society held its January meeting at Atlantic on the ninth at the Commercial Club rooms with eleven members present. F. J. Becker, of Atlantic, reported a case of Tubal Pregnancy; A. Weaver, of Cumberland, read a paper on Carpal Fractures and Their Management; M. F. Stults, of Wiota, reported a case of Chronic Rheumatism of the Right Deltoid Muscle, Six Months' Duration.

A resolution was passed authorizing the payment of the Iowa State Medical dues of any member now in the service of the government. Also a resolution was passed authorizing the payment of 30 per cent. of the receipts for service rendered by any doctor to the patients of a doctor called to the service to the family of such physician. The officers elected for 1918 at this meeting are: President, M. F. Graham, Atlantic; vice-president, R. A. Barnett, Cumberland; secretary-treasurer, M. F. Stults, Wiota; delegate, W. S. Greenleaf. M. F. S.

At the annual meeting of the Cerro Gordo County Medical Society held recently, the following officers were elected: President, F. C. Scanlon, Clear Lake; vice-president, Stella Mason, Mason City; secretary-treasurer, C. E. Dakin, Mason City.

The Cherokee County Medical Society held its annual meeting at the State Hospital, January 15, at which time the following officers were elected: President, Rose H. Jamison, Cherokee; vice-president, T. C. Knox, Marcus; secretary-treasurer, Paul Allen, Cherokee; delegate, George Donohoe; alternate, C. H. Hall.

At a recent meeting of the Clayton County Medical Society, the following officers were elected: President, A. E. Beyer, Guttenberg; vice-president, F. J. Kriebs, Elkport; secretary-treasurer, J. C. Brown, Littleport; delegate, W. J. McGrath, Elkader; alternate, A. E. Beyer, Guttenberg.

At the Dallas-Guthrie County Medical Society meeting held January 17 at Hotel Arlington, Adel, a very instructive address was given on Medical Ethics by the president, O. J. Pennington, of Dexter. J. A. Ball of Stuart, read an interesting paper on the Problem of the Deaf. A large representation of the membership of this progressive organization was in attendance. The society voted to pay the 1918 state dues of its members who are now in the government service. The 1918 officers are: O. J. Pennington, Dexter, president; W. A. Seidler, Jamaica, vice-president; S. J. Brown, Panora, Secretary-treasurer; delegate, C. I. Thomas, Guthrie Center; alternate, E. J. Butterfield, Dallas Center.

At the meeting of the Des Moines County Medical Society held at the Commercial Exchange rooms,

Burlington, January 9, two very interesting scientific papers were read and discussed. C. H. Magee, read a paper on Some Peculiar Complications of Appendicitis; and Intestinal Obstruction was the subject considered in the paper read by F. M. Tombaugh.

The Dubuque County Medical Society meeting held January 8 at the Dubuque Commercial Club was announced through a unique little bulletin, giving the program, calling attention to the payment of dues, and emphasizing the loss to a member failing to make payment before February 1.

The program for this interesting meeting was a Symposium on Syphilis, presented under the following heads: The Wassermann Test on the Blood and the Spinal Fluid, Dr. Hesselberg; Congenital Syphilis, C. P. Forward; Syphilis of the Cardio-Vascular System, J. J. Rowan; Syphilis of the Nervous System, C. E. Lynn; Syphilis of the Eye, H. B. Gratiot.

Some of the important and valuable points brought out and emphasized in the papers and discussions were: Frequently a negative Wassermann resulted in a luetic patient who had used alcohol freely twenty-four to forty-eight hours before the specimen was obtained. Syphilis like tuberculosis and cancer should be diagnosed early if the best results for the patient are to be expected. Often the diagnosis of a late tabes can be made by merely looking at the patient, but the physician who is satisfied with this method of practice is not fair to the profession or to his patient.

A careful history, a complete physical examination, and the intelligent use of laboratory methods to check diagnoses, are an absolute necessity. When this method is not followed, we often see cases of gastric crises operated upon for gall-stones, cases with tabetic lightning pains treated with salicylates for "rheumatism," and cases of early paresis sent to the bath houses or springs to relieve the so-called neuresthenia of over-work. When the general practitioner learns to recognize syphilis, the oculist will be deprived of a large per cent. of his work.

At the December meeting of the Floyd County Medical Society held at Charles City, a very instructive as well as a very pleasant social time was enjoyed with nearly the entire membership in attendance. M. B. Call, of Greene, and R. H. Lott, of Waverly, were the guests of the society.

The program consisted of a paper by R. W. Stober, of Charles City, on The Preliminary Treatment of Compound Fractures; one by R. H. Lott, Waverly, on A Study of Gastric Cases; and Erysipelas, and Some Practical Points in its Treatment, was considered by C. O. Yenerich, of Rockford. The papers were above the average and showed careful thought and preparation on the part of the authors.

Dinner was served at 6:30 at the Hildredth Hotel.
W. L. G.

The Howard County Medical Society met at the office of W. C. Hess, Cresco, December 27. In the absence of the president, the meeting was called to order by the vice-president, J. W. Jinderlee.

After the reading and approval of the minutes of the last meeting, the election of the 1918 officers followed. The officers are: President, J. W. Jinderlee, vice-president, Wm. Connolly; secretary-treasurer, W. C. Hess, all of Cresco; delegate, H. W. Plummer, Lime Springs; alternate, George Kessel, Cresco; censors, H. B. Gardner, Geo. Kessel, and Wm. Connolly.

Capt. George Plummer and Capt. Herbert W. Plummer were home on a furlough from Fort Riley, and attended the meeting, giving interesting talks on camp life as they find it at Fort Riley.

At this meeting the following resolution was passed:

Resolved: That it is the sense of this society that doctors should be discouraged from locating in the field previously occupied by members of the society having volunteered for service in the Medical Reserve Corps of the U. S. Army.
W. C. H.

The Johnson County Medical Society, through its program committee, is arranging excellent programs for the 1918 meetings. Every member is requested to make a scientific contribution during the year along some line: a carefully prepared paper, the presentation of a clinical case, a five minute abstract of a paper read at a medical society meeting reported in some medical journal, or any informal contribution. The program, carried out at the January ninth meeting held in the east basement of the University Hospital, Iowa City, speaks for the success of such efforts. Clinical cases were presented; five minute abstracts were given by Laura H. Branson, and Henry Albert, of Iowa City; H. V. Scarborough of Oakdale, read a paper on The Early Diagnosis of Tuberculosis; and Dr. Frank Smithies, of Chicago, a guest at this meeting, presented a paper on the Diagnosis and Treatment of Gastric Ulcer in the Light of Modern Clinical and Experimental Research, illustrating his paper with lantern slides.

At the February sixth meeting the abstracts were given by A. C. Davis and Bundy Allen. The Symptoms and Diagnosis of Gall-Bladder Disease was the subject considered by C. J. Rowan, and O. J. Fay, of Des Moines, read a paper on Traumatic Rupture of the Urinary Bladder.

Clinical cases and informal reports were presented.

The annual meeting of the Kossuth County Medical Society was held at Algona December 28, at which time the officers for 1918 were elected as follows: President, John W. McCreery, Whittemore; vice-president, Warren T. Peters, Burt; secretary-treasurer, John G. Clapsaddle, Burt; delegate, W. T. Peters; alternate, C. D. Fellows, Algona.

The scientific interest of the meeting centered

around the case reports made by Drs. Kenefick and Cretzmeyer.

The Muscatine County Medical Society held its annual meeting and election of officers January 18, at the office of Dr. E. H. King, Muscatine.

The election of officers resulted as follows: President, T. F. Beveridge; first vice-president, W. H. Johnston; second vice-president, W. A. Cooling, secretary-treasurer, E. H. King; delegate, D. P. Johnson; alternate, W. H. Johnston, all of Muscatine.

A committee representing the public health bureau of the Welfare Association of Muscatine, was present, soliciting the co-operation of the physicians in making a tuberculosis survey of the city as planned by the State Anti-Tuberculosis Society. The society unanimously voted to co-operate with the welfare association, the board of education, the board of county supervisors and the Greater Muscatine Association, in making the survey.

At the regular meeting of the Plymouth County Medical Society held at Le Mars, February 5, J. A. Lamb, of Le Mars, read a paper on Leukemia; W. E. Cody, of Merrill, presented a paper on Hematuria with a brief report of two cases; and J. L. Reeves, of Le Mars, had a paper on Croupous Pneumonia—Physical Diagnosis.

The Polk County Medical Society met at the Savery Hotel, Tuesday evening, January 29. Dr. George Cullen presented a clinical case with a paper on the subject of Cretanism. Dr. R. H. Parker presented a paper with clinical reports of several cases on Sinus Thrombosis following Mastoiditis. Both papers were discussed freely. A committee of three, Drs. Lena Means, J. C. Doolittle and A. C. Page, presented the following resolution, which was passed, relative to a campaign on Social Hygiene as recommended by the general medical board of the National Council of Defense.

Resolved: That the Polk County Medical Society take the initiative in organizing and carrying out a public health campaign for a broader intelligence of social health among the civilian population.

That a committee be appointed by the president to decide upon necessary cooperation with other organizations, and to prepare a minimum list of facts to be presented in this campaign whether in lectures, newspaper articles or pamphlets.

The annual meeting of the Scott County Medical Society was held at the Blackhawk Hotel, Davenport, January 8. The officers elected for this year are: President, Frank Neufeld; vice-president, Roscoe P. Carney; secretary, R. E. Jamison; treasurer, S. G. Hands; delegate, A. P. Donohoe, alternate, J. S. Weber, all of Davenport.

The Taylor County Medical Society, met at Lenox, December 21, for the annual meeting and election of

officers. The officers chosen were: President, H. E. McCall, Clearfield, re-elected; vice-president, S. M. Hamilton, Lenox; secretary-treasurer, D. W. Reed, Clearfield.

The annual meeting of the Union County Medical Society was held December 29 at the office of H. A. Childs. The officers re-elected are: President, Edward Schifferle; vice-president, W. K. Keith; secretary-treasurer, H. A. Childs, all of Creston.

A motion was made and carried to make a pro rata assessment of the membership sufficient to pay the dues of the members now engaged in the service of the government.

At the meeting of the Warren County Medical Society held December 4 at Indianola, the following officers were elected: President, L. E. Hooper; vice-president, W. M. Park; secretary-treasurer, G. H. Alden; delegate, M. L. Hooper; board of censors, L. H. Surber and E. L. Baker.

For the year 1918 it was planned to hold monthly meetings, and have a program consisting of two papers presented at each meeting.

The first meeting was held January 8 at which time a paper on Infantile Paralysis was given by J. H. Moore, and a paper on Pituitrin was read by G. W. Newsome.

At the meeting held February 5 the following papers were presented: The Laboratory, as an Aid in Diagnosis to the General Practitioner, by Julius S. Weingart of Des Moines, and Acute Lymphoid Leukaemia, by L. E. Hooper, Pleasantville.

G. H. A.

The Woodbury County Medical Society held its annual meeting at Sioux City in January, and elected officers as follows for 1918. President, R. M. Waters; vice-president, L. R. Tripp; secretary-treasurer, W. D. Runyan; delegate, W. W. Dean, all of Sioux City; delegate, R. M. Conmey, Sergeant Bluff; alternates, A. J. McLaughlin and J. A. Dales; censors, Dales, Shuman and Perkins, all of Sioux City.

The Sioux Valley Medical Association held its twenty-second semi-annual meeting at Sioux City, January 22 and 23. The two days' meeting was full of interest to the more than one hundred physicians in attendance.

The scientific sessions were exceptionally good as evidenced by the program which followed the business session the morning of the 22nd and closed at noon on the 23rd.

The papers presented were: Is the Fowler Position Always Desirable in Abdominal Drainage? E. A. Jenkinson, Sioux City; Essentials in Pediatric Diagnosis, G. E. Zimmerman, Sioux Falls; Radium Technique, D. T. Quigley, Omaha; Prostatectomy, L. J. Townsend, Sioux City; Subdiaphragmatic Abscess, Illustrated, Emanuel Friend, Chicago; Military Surgery, James M. Neff, Chicago; A Clinical and Ex-

perimental Study of Metastatic Joint Infection, Illustrated, Phillip H. Kreuscher, Chicago; Diseases of the Nasal Accessory Sinuses in Children, L. W. Dean, Iowa City; The Rational Basis of the Artificial Feeding of Infants, Albert H. Beifeld, Iowa City; Blood-Pressure: A Review of the Present Status of our Knowledge Concerning Blood-Pressure, Causes and Pathological Significance of Variation, H. J. G. Koobs, Scotland, S. D.; Intestinal Disorders in Children, Chas. P. McHugh, Sioux City; Possibilities of Local Anesthesia in Major Operations, G. G. Cottam, Sioux Falls, S. D.

A banquet was enjoyed the evening of the first day by the members and their guests at the Martin Hotel.

The officers of the association are: President, W. R. Brock, Sheldon, Iowa; vice-presidents, A. F. Spaulding, Luverne, Minn., A. C. Stokes, Omaha, Nebr.; secretary, G. S. Browning, Sioux City, Ia.; treasurer, N. J. Nessa, Sioux Falls, S. D.

The next meeting of the association will be held at Sioux Falls, S. D. in July.

DEATHS

Lieut. Stephen Ballard Rybolt, M.D., M.R.C., U. S. Army; aged forty-four; St. Louis University School of Medicine, 1913; Fellow of the American Medical Association; member of Iowa State and Linn County Medical Societies; a practitioner at Troy Mills; assigned to duty with the Three Hundred and Fifty-first Infantry, N. A. Camp Dodge, died at the base hospital, Camp Dodge, January 10, from heart disease. Lieut. Rybolt was the first Iowa member in the Medical Reserve Corps to be claimed by death.

Carrol C. Smead, M.D., aged sixty-eight; Rush Medical College 1880; Fellow of American Medical Association; life member of Jasper County and Iowa State Medical Societies; health officer of Newton; local surgeon of the Chicago, Rock Island and Pacific Railway; a practitioner for many years at Newton; died at his home, January 7 from cerebral hemorrhage.

Captain E. M. Sheehan, M.D., 132d U. S. Infantry was born at Independence, Iowa, September 27, 1880, and died from pneumonia at Camp Cody, N. M., January 12, 1918, aged thirty-eight years.

After spending two years at Iowa University, he completed his medical course at Northwestern University Medical School, Chicago, in 1905. He served an internship in St. Joseph's Hospital, Denver, Colorado, and thereafter was associated for two years with Dr. W. J. McGrath at Elkador, Iowa. For a brief period, he located at Lamont, Iowa, coming to Independence in 1907, and there continued practice until entering the army service. He enlisted as a private in Company E, Forty-ninth Iowa, I. N. G. February 5, 1900, remaining a member until the com-

pany was mustered out in May, 1902. He enlisted in the new Company L, Forty-ninth Iowa June 16, 1902 and was appointed second lieutenant in that company February 12, 1907. On July 11, 1907, he was commissioned second lieutenant and battalion quartermaster commissary officer of the Fifty-third Iowa Infantry and was transferred August 1, 1913 to the medical corps as first lieutenant. May 6, 1914,



Died in the Service
CAPT. EDWARD M. SHEEHAN, M. C., N. G., U. S.
1880-1918

he was commissioned first lieutenant and surgeon in the medical corps of his regiment and remained in that position until early last summer when he was commissioned captain in the same organization and was acting in that capacity at the time of his death.

In civil and professional life, he stood at the forefront in all that made for progress and advancement. A kindly personality, a deep sense of responsibility and a sincere earnestness in the performance of his obligations made him hosts of friends who universally mourn his passing.

He was buried at Independence, January 19, 1918, with military honors.

Capt. Sheehan was a Fellow of the American Medical Association and a member of the Iowa State and Buchanan County Medical Societies.

The Buchanan County Medical Society pay high tribute to Captain Sheehan as a soldier and a gentleman and feel deeply the sorrow of his loss.

Levi H. Surber, M.D., aged sixty-eight, College of Physicians and Surgeons Keokuk, 1877; member of Warren County and Iowa State Medical Societies; one of the pioneer physicians of Warren County, having been in practice in that locality for nearly forty years; died suddenly, while making a profes-

(Continued on Advertising Page xvi)

During Infancy and Childhood it is important but difficult to keep the bowels in order. It can be done by the continued use of

Liquid Petrolatum Squibb

Heavy (Californian)

It is pure and safe, tasteless and odorless. Because it is neither a laxative, a cathartic, nor a purgative, but a perfect mechanical lubricant, is not absorbed by the system and does not disturb digestion, it may be given indefinitely in any necessary quantity. Thus it prevents intestinal toxæmia, restores normal action of the bowels, and aids in maintaining normal nutrition. Especially valuable for young patients during the summer and autumn months.

To be had at all drug stores in original one-pint packages under the Squibb label and guaranty.

LIQUID PETROLATUM SQUIBB, Heavy (Californian) is refined under our control and solely for us only by the Standard Oil Co. of California, which has no connection with any other Standard Oil Co.

E. R. SQUIBB & SONS, NEW YORK

Manufacturing Chemists to the Medical Profession since 1858

DEATHS

(Continued from Page 72)

sional call, in his home town, Indianola, January 17, from heart disease.

William Cranston Post, M.D., aged sixty-nine; Columbia University College of Physicians and Surgeons, 1881; at one time a member of the Iowa State Medical Society, died at his home in Maquoketa, January 12 from a paralytic stroke.

Frank Post Butler, M.D., aged fifty-seven; State University of Iowa College of Medicine, 1887; Fellow of the American Medical Association; member of Iowa State and Hardin County Medical Societies; mayor of Whitten, and for twenty-two years a practicing physician at that place, died at St. Thomas hospital, Marshalltown, from septicemia, January 30.

John M. Yost, M.D., aged eighty, College Physicians and Surgeons, Keokuk, 1863; died at the home of his daughter in Pulaski, Davis county, January 7.

Henry W. Boynton, M.D., aged eighty-one; Albany Medical College, 1866; a veteran of the Civil War; at one time a member of the Iowa State Medical Society; a practitioner at La Porte City in the seventies, and later at Toledo; a pension examiner during the years of his active practice; died at his home in Toledo from heart disease, January 21.

Mrs. Harry R. Irish, wife of Dr. H. R. Irish, of Forest City, died at St. Luke's Hospital, Saint Paul, January 14, from exophthalmic goiter.

Mrs. Emily A. Hanawalt, wife of the late Dr. George P. Hanawalt, one of the pioneers, and for many years one of the leading surgeons in Des Moines, died at her home in Des Moines, January 21, after a lingering illness, aged seventy-five years.

BIRTHS

Dr. and Mrs. J. M. Knox, of Cedar Rapids, January 19, a daughter.

Dr. and Mrs. Edwin Cobb, Marshalltown, December 26, a daughter.

MEDICAL NEWS

Ten physicians have been added to the medical advisory board of the Des Moines district, namely: Drs. O. J. Fay, R. R. Snyder, W. E. Sanders, E. B. Winnett, L. E. Kelley, E. J. Harnagle, R. L. Parker, A. D. McKinley, C. G. Dickey, and C. B. Luginbuhl.

Dr. Royal F. French, and wife, of Marshalltown, are spending the winter in Los Angeles. Dr. French suffered a severe illness before going to California, and is slowly regaining his health.

Dr. John W. Petrovsky, of Cedar Rapids, sustained a fractured skull and other injuries January 10 when his automobile struck a snow drift and overturned.

Dr. and Mrs. W. B. La Force, of Ottumwa, left January 28 for San Francisco, from which place they will depart February 9 for Peking.

Dr. A. L. Washburn, formerly of Oskaloosa, after one and one-half years with the city hospital, Edinburgh, Scotland, is now with a British Field Ambulance force in France.

Dr. John R. Sprague, professor of Hygiene and Sanitation at Grinnell College, has been called to the Health and Sanitation Department of the United States Shipping Board, Washington, D. C.

Dr. Paul Van Metre, formerly of Tipton, who has been in medical missionary work at the Sritamarat Memorial Hospital, Nakawn, Siam, during the past four years, has returned with his family for a visit with relatives at Tipton, and a duration of rest.

Dr. Robert A. Weston, of Des Moines, has been commissioned by the government as the acting surgeon for the control of venereal diseases in the cantonment zone. Working in connection with Dr. Weston, will be one female and one male Red Cross nurse, two social service nurses, and four Des Moines police women. The office headquarters and clinic will be maintained in Des Moines.

CHANGES OF LOCATION

Dr. C. W. Mattison, of Swea City, has sold his practice, and will spend the winter at Los Angeles, taking a post-graduate course at one of the medical schools in that city.

DEPENDABLE PRODUCTS FOR THE MEDICAL PROFESSION

We manufacture a complete line of medicinal products of the very highest standard which we offer direct to members of the medical profession. Every product is ready for immediate use, easily dispensed. We guarantee them true to labels and of reliable potency—our catalogue free on request.

THE ZEMMER CO.

FORBES FIELD

Chemists to the Medical Profession

PITTSBURGH, PA.

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, MARCH 15, 1918

No. 3

ORGANIZATION OF EFFECTIVE ANTI-TUBERCULOSIS WORK*

D. B. ARMSTRONG, M.D., M.A., M.S.

Assistant Secretary of the National Association for the Study and Prevention of Tuberculosis, and Executive Officer of the Framingham Health and Tuberculosis Demonstration

In considering the subject of the "Organization of Effective Anti-Tuberculosis Work," our remarks shall be confined to this work as it applies to cities, towns, and smaller communities. No effort will be made to deal with the problem on a state and national basis. Our reasons for adopting this procedure are two in number: in the first place, we do not feel competent to discuss the state and national problems; in the second place, we are attempting in the work in Framingham, Massachusetts, to perfect a complete program for the detection and control of tuberculosis in a typical community of smaller size.

Further, we can perhaps best indicate our attitude toward such a program by outlining in detail the work as projected and partially completed in Framingham. It will be noted that in our estimation the tuberculosis problem cannot be attacked only by direct methods. Any program that aims at the complete control of the problem must involve the construction of a complete community health machinery.

As announced in the papers and elsewhere, the Framingham Health and Tuberculosis Demonstration is being conducted under the supervision of a committee organized by the National Association for the Study and Prevention of Tuberculosis. On this committee† are represented the National Tuberculosis Association, the Massachusetts State Department of Health, the United States States Public Health Service, private anti-tuberculosis organizations in Massachusetts, Connecticut, New York, and Pennsylvania, and the Metropolitan Life Insurance Company, the

donors of the \$100,000 to be devoted to the work.

The selection of Framingham was made after several months' study of numerous communities of similar size in various parts of the United States, but particularly in Massachusetts and New York State. Framingham recommended itself to the committee because it possessed certain average qualities, being an industrial community, with mixed industries, varied racial groups, a good local health organization, backed up by an excellent state department of health, a normal amount of disease, particularly tuberculosis, well trained physicians and good hospitals, and sufficient promise of cooperation from medical, industrial, commercial and social organizations to give reasonable assurance of success.

Is it possible to discover and to place under adequate medical, nursing and relief supervision all of the cases of tuberculosis, incipient and advanced, in a normal industrial community?

Is it possible to ascertain with some degree of definiteness the responsible social and economic factors in disease causation, including all types of morbidity, not only tuberculosis?

What is the most efficient utilization of the existing means available for the discovery and treatment of disease? What percentage of theoretically preventable disease is practically preventable with the use of known but unused, or at least uncoordinated instruments? What is the best possible adjustment of social forces, existing or to be created, with the objects of the prevention of unnecessary disease and death?

Such in brief are the fairly ambitious questions which Framingham is attempting to solve. If the community is the logical social unit for disease prevention and control, and if the time is right for the application of a complete program for disease prevention and health creation, there is every reason to hope that, in some degree at least, answers to the above questions may be demonstrated. Obviously, the problem is not only one of tuberculosis, and not only a health problem; fundamentally it is a problem of social and economic organization.

*Presented in the short course for Health Officers at Iowa City, September 20, 1917.

†The committee in charge of the work is as follows: Dr. Edward R. Baldwin, chairman; Dr. Charles J. Hatfield, secretary; Dr. Lee K. Frankel, Mr. Homer Folks, Dr. Arthur K. Stone, Dr. Eugene R. Kelley, Dr. Steven J. Maher, Dr. Wm. C. White, Mr. Henry S. Dennison, Dr. Victor Safford and Dr. F. C. Smith.

As indicated above, the objects of the investigation are to demonstrate what may be possible with united community action in the problem of prevention and control of tuberculosis. Inevitably the experiment, if it goes forward as planned, will broaden out into a general health demonstration concerning itself with the various disease preventive problems, as they affect the several age groups, and utilizing in its effort at control all potential agencies,—social, industrial, educational, medical, etc.

Briefly stated, the essentials of the demonstration, as viewed by the committee, are as follows:

1. The sympathetic cooperation of all individuals and organizations, public and private, in Framingham.

2. The execution of the program on an educational, persuasive, and democratic basis, social machinery being devised to carry the various elements in the community organization along with the work as it progresses.

3. The utilization of expert advisory service whenever feasible. This principle applies, of course, to general sanitary, medical, nursing, educational, school, or industrial problems.

Before this audience, in presenting, in the time allowed for this discussion, the important phases of the program, special attention must be paid to the medical and health aspects of the plan. Consequently, only the briefest mention can be made of other significant steps.

It will be realized by anyone who has given thought to the problems of preventive medicine, that the phases of a complete community program present certain theoretically clearly distinct aspects. There is in the first place, the preparation of the community for active participation and full understanding in the work as it is carried out. Along with this go certain activities that may be considered diagnostic in character; that is to say, there must be first a carefully designed effort to make a diagnosis of the community's vital health needs.

These diagnostic activities are further subdivided, and fall under two heads; first, those which are concerned with the physical conditions in which the people work and live, namely the environment; and second, those which apply particularly to the individuals themselves.

The final step is that of community treatment, involving the application of the diagnostic findings and the following out of the therapeutic indications on a community scale. For the sake of clarity as well as brevity, we will take up in a somewhat artificial chronological order the phases of the Framingham program as they have

been developed or are foreshadowed in the health demonstration.

Time will allow for little more than an itemization of these steps. Their presentation in this order is, as stated above, entirely artificial, in view of the fact that numerous activities in all phases of the work have to be initiated and urged forward simultaneously.

A. *Preparatory Steps*—As stated previously, it is felt by the committees in charge of this work that the whole project, if it is to be of permanent value, must be carried out on a democratic, educational basis. For that reason, a great deal of attention has been given to certain fundamental preliminary measures, such as the following:

1. The acquainting of the people of Framingham with the motives, methods, and practical objects of the demonstration. Special literature has been distributed, almost daily articles supplied to the press, numerous meetings addressed on all sorts of occasions, etc.

2. An intimate and elastic local committee organization. This has involved the selection of a local executive committee, (13 members), a local advisory council, with numerous sub-committees, a committee on infant welfare, a committee on industry, etc. In addition, and most important, plans are being made for the early organization of small informal neighborhood committees, selected on a block basis, representative of the leading personalities in the community, to serve as a direct channel of interchange between the health demonstration office and the homes of the people.

3. The encouragement of the town to meet its own obligations, and to place the non-experimental phases of the work on a basis of permanency. This work has already resulted in the handing over to the Community Health Station of the two old school buildings for possible use in the treatment of tuberculous cases or the so-called pre-tuberculous children, the laying of definite plans on the part of the local hospital to meet the out-patient clinical needs of the community, the establishment of permanent, full-time medical and nursing service for the school children, the establishment of supervising nursing service by the board of health, the establishment of full-time medical and nursing service for at least half of the industrial population, provision of a full-time secretary with plans for nursing and relief service under the auspices of a local civic league, etc.

4. The organization of a local medical club. The importance of this organization cannot be over estimated, serving as it does as a channel for reaching collectively the medical men in the

community. It is an instrument by which their understanding of the program may be facilitated, and the universal adoption of certain diagnostic and treatment standards encouraged.

5. The determination of tuberculosis standards. This preliminary work has been carried out by a committee of specialists from Boston and elsewhere. There have been worked out, for presentation to and use by the local medical men in Framingham, standards for the diagnosis of incipient adult tuberculous disease, for the diagnosis of tuberculosis among children, for the classification of recognized tuberculosis, for treatment of tuberculosis in its several stages, etc.

B. *Community Diagnostic Steps*—As stated above, the measures aimed at the valuation of the community's needs fall under two groups, the first of which concerns:

I. The environment.

A study of the community's disease hazards has now been completed in Framingham. This study has touched in the main the following realms of human contact:

1. As analysis of the community's statistical background. This has involved a study of both death, birth and sickness statistics for the past ten years, a careful determination for different geographic and racial sections in the community of infant mortality rates, a checking-up on birth registration, and effort to correct the tuberculosis death rate during the past years, etc.

2. A study of rural sanitation. One of the reasons why Framingham was selected was because there was presented in part of the community a distinct rural problem. The rural study covered therefore, the hazards of rural life, involving an analysis of stable, privy, food, drinking water, housing, and other factors.

3. A study of milk production and handling, a study of food sanitation in all kinds of food shops, etc.

4. A study of general sanitary conditions in the community at large, including a privy and well census, a survey of fly and mosquito breeding conditions, and other allied problems.

5. A very careful survey of hygienic conditions in the schools, including the problems of general sanitation, cleanliness facilities, illumination, ventilation, heating, seating, etc.

6. A thorough analysis of hazards in industry, including ventilation, illumination, dust, fumes, cleanliness facilities, machine guarding, etc.

All of these sanitary studies have been carried out under the direction of Mr. Franz Schneider, Jr., the sanitarian for the Russell Sage Foundation, and in this work he has had the cooperation

and assistance of many agencies, including the Massachusetts State Department of Health, the Massachusetts State Board of Labor and Industries, the Museum of Safety, the New York State Commission on Ventilation, the United States Public Health Service, all of which agencies have assigned men and instruments from time to time to assist in the completion of the survey program.

II. The People Themselves.

This is the second great division of the community diagnostic problem. There were mentioned above the measures taken to ascertain the hazards of life and work in Framingham. This work has been supplemented by several distinct efforts to ascertain what actual conditions prevail among the people of Framingham, including not only factors of medical and hygienic importance, but certain indirect, yet fundamental factors, social and economic in character. A brief mention of the chief measures follows:

1. A study of infant and child life in Framingham, including particularly the pre-school group. In this work we have had the cooperation of the *Delineator* magazine in its infant welfare campaign. This has made possible the visit of every home in Framingham in which a birth was recorded during the last year, with the enumeration of certain prenatal, obstetrical, and postnatal facts. This work, coupled with an aggressive baby week campaign, has resulted in the establishment of infant clinics, on a permanent basis, involving the cooperation of the local physicians, assisted by expert consultants in difficult cases of infant morbidity.

2. A tuberculin survey of children from one to seven years of age.

3. A study of physical conditions among the school children, as a part of the community's plan for full time medical and nursing supervision of the school population.

4. A survey of social and economic conditions in Framingham, bringing out facts regarding home hygiene, income and rent, etc. This work was done in cooperation with the Massachusetts Committee on Safety, and was in reality a part of a patriotic census of resources, taken by 200 volunteer enumerators. For the most part, these enumerators were selected from their own districts, and form the nucleus for future community social organization, making possible a perpetual check upon changing economic and social conditions.

5. A health or sickness canvass of rural as well as urban parts of Framingham. This work was done by nurses secured from the local hos-

pital, as well as from cooperating Boston organizations, such as the Boston District Nursing Association. In part also, several large insurance companies represented in Framingham, such as the Metropolitan, the John Hancock, and the Prudential, aided materially in the collection of data regarding recognized and admitted illness.

Fortunately, this sickness census included those families which were later given thorough medical examinations, thereby making possible for the first time a direct comparison between sickness census findings and genuine medical examination results. In this sickness census work about two thousand families, representing all types and conditions of people in Framingham, were censused.

6. A medical examination campaign. In this work, the most important and radical step taken thus far, about one thousand families were first visited by nurses and insurance agents, in order to take a sickness census, and to make arrangements for medical examinations. Histories were then taken of those individuals willing to be examined, subsequent to which the people themselves, men, women, and children, were given a thorough medical examination in the houses. This work involved the employment of seventy-two physicians from out of town, specially trained in tuberculosis work. It also took the full time of twenty-five nurses and eighteen laboratory workers to cover the field in one week's time.

In all, twenty-four hundred histories were taken, two thousand people examined, and fourteen hundred urinalyses made. The people examined were reasonably well distributed as to age, sex, nationality, economic condition and geographic distribution, the results being therefore representative not only of Framingham as a whole, but of most other typical American industrial communities.

The final analysis of the results of this medical work is still under way, and for that reason it would be impossible, even if time permitted, to discuss the results more fully at this time. It is believed, however, that an unexpectedly large amount of suspicious and positive tuberculosis has been discovered, involving a follow up nursing and medical program of major importance.

The committee is convinced also that the results of the work, on the general medical as well as on the T. B. side, will serve as a very effective instrument for the promotion of routine thorough medical examinations of supposedly healthy people.

Fortunately, the medical examinations have now become more or less endemic in Framingham and are being carried out not only by Com-

munity Health Station representatives, but also by local physicians. The local men are calling in expert consultants when needed, are using standard history and examination record forms, and are charging a minimum price for health examinations on an individual or, preferably, on a family basis.

C. *Community Treatment*—The above measures indicate for the most part the progress to date of the Framingham Community Health and Tuberculosis Demonstration. It remains now briefly to point out what seems to the committee to be the follow up steps, the community treatment measures, as indicated by the preliminary findings.

Obviously, there is still much to be done on the diagnostic side. A careful analysis of results thus far will indicate further measures of significance, if we are to derive from this demonstration an exact knowledge of the factors that are of importance in the production and perpetuation of tuberculosis in a normal American community.

Medical findings must be correlated with social and economic conditions. Light must be thrown, if possible, upon the relative importance of infection on the one hand, and hereditary resistance on the other. Only an intensive scrutiny of the progress of the work as carried out along accepted, routine lines, will indicate probable loop holes in the community's defense against disease, and probable additional measures for filling the gaps hitherto undemonstrated.

The major treatment activities immediately contemplated are as follows:

1. The correction of environment conditions. The Community Health Station feels assured of the cooperation of local official and private agencies in the application of the findings of the sanitary study, in schools, factories, etc., or in the community at large.

2. Education and publicity. The Community Health Station will make every effort to popularize these findings which require public support for their effective application. A program is under construction which will reach all interests in the community, which will use not only special occasions, but also routine educational channels, such as the schools, the churches, the clubs, the factories, etc. This work ought to lay the basis for future hygienic practices in the houses, schools, factories and work shops. It ought also to result in bringing under continuous and competent medical supervision, the major part of the entire population, as a result of the popularization of the medical examination findings, etc.

3. The continued encouragement of the community to meet its own obligations. This applies not only to the public requirements, such as school medical inspection, public health nursing, etc., as mentioned in an earlier part of the paper, but also such measures as medical factory inspection, improvement in dairy conditions, milk pasteurization, etc.

4. The use of the local medical organization, to bring about a higher degree of efficiency and standardization in local medical diagnosis and therapeutics. An expert consultation system is being worked out; with the cooperation of the Public Health Service, the physicians are being asked to report all types of morbidity; standard methods for diagnosis and treatment for tuberculous cases are being advocated; lectures and clinics bearing particularly on the detection of incipient diseases are being planned under the auspices of the local medical club and the Extension Department of the Harvard Medical School, etc.

5. The co-ordination of nursing activities. The nursing agencies in the community, including the District Nursing Association, the local hospital training school nurses, the Civic League relief and infant welfare nurse, the school nurse, the factory nurses, and the board of health public health and T. B. nurse, are also being coordinated into a nursing unit, with adequate expert supervision, emphasizing the principle of generalized rather than specialized nursing. In this work, the board of health nurse will act as the central agent, supervising the work of the other agencies on a basis of mutual understanding and cooperation.

6. Provision for out-patient medical service. The local hospital has plans for setting aside a part of its equipment sufficient to provide out-patient medical, minor surgical, infant welfare, nose and throat, eye refraction, and dental services. This work will be developed in cooperation with the local medical club, assisted by expert consultation services when necessary, and will be placed so far as possible upon a self-supporting, pay, medical compensation basis. It will provide medical and health center facilities, not only for the community at large, but also for the diagnostic end of the medical services in schools and factories in the community.

7. The careful follow up of the results of the medical examination and infant consultation campaign, arranging for treatment by the local physicians. This follow up work will involve certain problems not directly related to the special T. B. interests of the community. The groups of

citizens' reports as a result of the medical examination work will be as follows:

- a. Normal individuals.
- b. Individuals with slight affections, to be referred by correspondence to their physicians for treatment.
- c. Individuals with non-tuberculous, serious affections, to be referred by correspondence and nursing visit to their physicians for treatment.
- d. Venereal cases to be handled confidentially with the local physicians.
- e. Glandular cases in children, possibly tuberculous, to be reached by special nursing and educational follow up.
- f. Tuberculosis cases, positive or suspicious, upon which the follow up energies of the Community Health Station will be specially concentrated. This will involve nursing visits, subsequent re-examinations, treatment by local physicians, or through other channels on an expert consultation basis, final classification as to diagnosis, and continuous follow up educational activity.

8. The use of all available treatment facilities for tuberculosis cases. This in brief involves the utilization of at least the following channels:

- a. Home treatment, with the aid of the local physicians, in the great majority of cases. In Framingham it will probably be possible to find the diseased individuals in the early stages of the infection, when moderate modifications in diet, personal hygiene, work, etc., will constitute adequate measures against the development of the disease. In these cases, of course, special educational and perhaps medical measures will have to be taken to prevent the spread of infection, particularly to infants and children.
- b. The establishment of summer camps or perhaps a preventorium for delicate children, with or without suspicious glandular development, previously known to have been exposed to the disease. For this purpose it may be possible to utilize one of the old school buildings in Framingham, held over by the town administration for this use.
- c. The establishment of at least a temporary and possibly a permanent local institution or clearing house for advanced cases among males and females, adults and children. This will be useful for cases on state institution waiting lists, for cases who do not desire to leave the community, or for cases in which their presence at home will involve hazardous exposure of other members of the family. Such an institution can be run in Framingham as a distant ward of the local hospital, thereby saving considerable overhead expense in nursing and other charges.
- d. The local hospital has placed at the disposal of the Community Health Station a sun room for the treatment of surgical cases of the disease.
- e. Wherever possible, established treatment facilities for advanced cases, or for incipient cases likely

to be improved by out of town treatment, will be used. This includes the four Massachusetts state institutions, several neighboring private hospitals, a large county hospital now under construction, etc.

9. Continued hygienic education. This of course, is an ever present need in any community and will be carried out continuously through all regular and special channels, reaching school, factory, and other groups. This public health educational work will for the most part be under the permanent supervision of an established local organization, namely, the Civic League. An effort will be made to bring under this organization, all private agencies interested in health or preventive medical work, thereby coordinating and centralizing efforts along these lines.

10. The coordination and permanency of local health and relief activities. As stated in the beginning, one of the essentials of the program is to have perpetuated on a permanent basis, those activities which are demonstrated to be of continuous value to the community.

There exists in Framingham two agencies for this work: first, the board of health, which with the assistance of the other official branches of the town government, is being encouraged to meet the normal community needs along public lines; second, the local Civic League, which organization is equipping itself to carry on health educational work, to promote domestic science and home economic education in cooperation with the local public and normal schools, to coordinate and carry out on a satisfactory basis whatever relief work is necessary in the community, and in general to systematize and place on a permanent basis of efficiency, those health, educational, and charitable activities not recognized by the town itself as official obligations. This coordination of public and private agencies will make a permanent social organization that ought to continue to meet the community's needs along all these lines, subsequent to the experimental stages of the health demonstration. The Civic League will also give attention to recreation facilities.

To summarize in a few words the methods and objects of the Community Health and Tuberculosis Demonstration, it may be pointed out that it is hoped to discover disease, especially tuberculosis, in its incipency, with the help of the local physicians, through the special examinations that have been and that are being carried on, through the special work among infants, in schools, in factories, and elsewhere.

Adequate treatment facilities, especially for tuberculosis, will be provided as above outlined, wherever possible on a basis of permanency, and

in such a way as to require the local community to meet its own logical and natural obligations.

Finally, it is hoped that general sanitation, health education, and continuous medical supervision, will act as effective instruments in the prevention of unnecessary disease and defect.

Thus far the health demonstration has demonstrated that with the sympathetic cooperation from local and outside agencies, the basis for community social control over disease producing factors can be laid. It is the hope of the committee that further developments of the work will demonstrate that on a community basis disease may be prevented and health created, thereby laying a permanent physical foundation for future social, economic and spiritual evolution.

SYMPTOMS AND DIAGNOSIS OF SINUITIS*

C. M. WERTS, M.D., F.A.C.S., Des Moines

For convenience, the accessory cavities of the nose are usually divided into anterior and posterior groups. The anterior group, sometimes referred to as the superficial sinuses, for the reason that they lie near the surface, include the frontal, anterior ethmoidal, and maxillary: All of these have their opening into the nasal cavity underneath the middle turbinate, in the anterior and central portion of the middle meatus.

The posterior group, which includes the posterior ethmoidal cells and the sphenoidal cavities, have their communication with the nose above the middle turbinate, and because of their position, are called deep sinuses.

Acute inflammations of one or more of these accessory cavities are, naturally, a frequent complication of any severe infection of the nasal mucous membrane.

The most prominent subjective symptoms are pain, discharge, disturbances of olfaction, and sometimes disturbances of sight, hearing, equilibrium, digestion and the nervous system. Pain manifests itself in various ways, such as headache, neuralgia, soreness or aching of the teeth. Pain, referable to the sinus itself, will vary greatly with the amount of retention of secretion, degree of swelling, and congestion of the mucous membrane within the nasal cavity and the sinus.

If the mucous membrane lining the sinus is ulcerated or eroded, or if the bone be diseased, pain may be more or less constant. Usually, however, it is paroxysmal and described by the pa-

*Read before the Section on Ophthalmology, Otology and Rhinology, Iowa State Medical Society, Des Moines, May 10, 11, 12, 1917.

tient as neuralgic. In sinus disease the pain increases and decreases gradually; it is increased by pressure; limited by the extent of the sinus, and the skin is hyper-sensitive.

In neuralgia the pain is of sudden onset, ceases abruptly, is decreased by pressure over the nerve involved; is limited by the distribution of the nerve, and there is more likely to be a partial anesthesia of the skin.

Pain of sinus inflammation is usually increased on stooping forward, on exposure to cold for any length of time, or by sudden jars such as coughing and sneezing. It is also aggravated by the excessive use of alcohol or tobacco.

Skullern says "Headache associated with sinus trouble is one of the commonest and, at the same time, one of the least understood of all the symptoms associated with the disease. As an individual symptom, indicative of disease of a particular sinus, it is thoroughly unreliable, but its presence or absence in the entire symptom complex is most important."

He gives as the causes of headache, (1) swelling of the mucosa and its pressure upon the nerves, (2) contact of swollen and inflamed mucous membranes, (3) negative pressure in the sinus, (4) obstruction to drainage, (5) ulceration of mucous membrane with involvement of nerves, (6) re-absorption of toxins from within the sinus, (7) disturbances of circulation.

By a study of the causes enumerated, we can more readily understand why the intensity of headache bears no relation to the extent or severity of the disease. It is conceivable that all the sinuses on one side of the head be extensively diseased without producing any of the conditions resulting in headache. It is also possible to conceive of ulceration, necrosis, or retention of secretion, in the smallest of the ethmoid cells, giving rise to the most intense headache.

The pain of headache may vary from a sharp, lancinating thrust, to a dull heavy ache. It is usually periodic, being more intense when the sinus is full of secretion, and has a tendency to recur in the same place.

No definite rule can be laid down as to the location of a headache which would result from disease of a given sinus. In a general way dull pain, between the eyes, would indicate ethmoidal disease. In frontal sinus disease the ache is usually referred to the super-orbital region. Antral disease will result in pain in the region of the antral cavity and the teeth. In sphenoidal disease the pain is referred to the vertex, the temporal region and the ears.

Yankhauer made the observation that inhala-

tion of steam, by contracting the nasal mucous membrane, thereby relieving pressure and facilitating drainage, would, many times, relieve headache if due to sinus disease. He considers this a valuable diagnostic aid. The character of the discharge is noticed by the patient to vary with the stage of the disease. For the first twelve to twenty-four hours after the onset of the pain, or neuralgia, no discharge is noticed; then there begins a discharge of mucous or muco-pus which later becomes purulent, and as the disease advances assumes a yellowish or greenish tinge, and in chronic disease may have an odor giving rise to the condition known as cacosmia. This, the patient soon learns to detect more distinctly by taking quick short inspirations through the nasal cavities.

A discharge having somewhat the odor of decaying teeth is almost pathognomonic of antral disease of dental origin. The odor from chronic sinus disease of non-dental origin is due to the gas formed by putrefactive changes which take place when the secretions remain in some improperly drained recess of the cavity. The patient will have noted that the discharge is more profuse at certain times of the day, and in antral disease where the sinus empties itself during the night, owing to the more favorable position of the ostia for drainage, the nasal cavities will contain an excess of secretion in the morning.

In frontal sinus disease the most favorable position for drainage is with the head in the upright position; hence the discharge comes on after the patient is up. Pain is most severe at this time, and gradually diminishes until it may be entirely absent during the later part of the day and night, coming on again the next morning at the usual hour.

The periodicity in connection with the frontal sinus has given rise to the term "sun pain," of which we so often hear from our frontal sinus patients. Other subjective observations in connection with sinus disease are, occasionally, parosmia or anosmia. Anosmia is the result of occlusion of the olfactory fissure either by secretion, swollen mucous membranes, or polypi. Occasionally patients suffering from sinus disease complain of disturbances of sight, hearing, equilibrium, digestion, mental activity or the nervous system. These do not occur with sufficient constancy to be classed among the prominent subjective symptoms. Their absence proves nothing while their presence may be of considerable importance.

The most prominent objective symptoms are, discharge, tenderness to pressure or percussion,

elevation of temperature in acute sinusitis, sometimes swelling, edema, odor, or general debility of the patient. Frequently the patient comes to us with a history of cold in one or both sides of the head, which has refused to recover, or more likely, with the story that the cold was getting better when the discharge from one side became more profuse and pain developed over the sinus involved.

The presence of irritating secretion about the alæ of the nose, and irritation produced by the use of the handkerchief, may give rise to excoriations or eczematous eruptions about the anterior nasal orifices.

On inspection of the interior of the nose, in acute sinusitis, one will find the mucous membrane swollen and inflamed. In fact the appearance is very much the same as in acute rhinitis without sinus complication, unless, perchance, the nasal cavity be open, and the ostium of the affected sinus sufficiently exposed to see secretion coming from the sinus. In chronic sinus disease the irritation from the secretion may result in polypoid degeneration of the mucous membrane and the formation of polypi.

The second most important objective symptom is tenderness to pressure. This refers only to the superficial sinuses, that is the frontal and maxillary. It is a very valuable diagnostic sign for frontal sinusitis. In maxillary sinusitis it is only of relative value because it is not constant. The sensitiveness of the teeth to percussion or pressure is of importance in connection with antral disease. The point of greatest tenderness when the frontal sinus is involved is at the upper and inner angle of the orbit. There is rarely tenderness to pressure over the frontal bone unless the inflammation be very severe. Percussion however, will frequently elicit tenderness, corresponding to the outline of the cavity. If tenderness be present about the antrum, it is usually most pronounced at the lower margin of the orbit or just above the canine fossa.

If, in the course of an acute rhinitis, a chill or rigor occur, it usually means that infection has invaded one or the other of the accessory cavities. If we have in addition to this, pain over a sinus, tenderness and a discharge, it speaks very positively for beginning sinus infection. In chronic sinus disease one will sometimes detect an odor from the nose, and the general appearance of the patient will be of importance. In severe acute forms of sinusitis the patient frequently has the appearance of great suffering and moves about with the utmost care in order to avoid unnecessary jarring. In chronic sinus disease the ap-

pearance of the patient may tell us nothing at all, or there may be emaciation or other symptoms of chronic infection.

Diagnosis—Generally speaking, the diagnosis of sinus disease is not so very difficult. It may however, in obscure cases, where more than one sinus is diseased and the nasal mucous membranes congested and swollen, or marked anatomical irregularities present, be extremely difficult. To establish to our satisfaction which sinus is involved as well as the extent to which it is diseased, sometimes requires the utmost patience, care and repeated examinations by all the means we have at our command.

The history is of great importance. We should know of what and how long the patient has been complaining, the nature of the onset, and what preceding conditions may have contributed to it, the condition and course of the patient's general health, and the character, location and periodicity of pain, if any has been present. We should inquire about disturbances of vision, vertigo, mental, nervous, or gastric disorders. We should ascertain the character of the discharge, the time of its appearance and whether it recurs at approximately the same time, and whether there has been cacosmia or disturbances of taste.

After getting the history we should begin a systematic inspection, noting the general appearance, the external as well as the internal condition of the nasal cavities, and whether there be edema or swelling over the external sinuses, or evidence of irritating or long continued discharge from either side of the nose. By anterior rhinoscopy we note the condition of the mucous membranes, whether inflamed and swollen, as one would expect in acute sinus disease, or if hypertrophies or polypoid degenerations are present, such as one would expect in chronic sinus disease. Note any anatomical irregularities. As far as possible inspect the ostia of the individual sinuses. This will rarely be possible in acute infections without the use of cocaine, adrenalin, and, sometimes, washing the nasal cavities with warm saline or other non-irritating solution.

If the anterior group of sinuses is affected, the middle turbinate will be congested, or infiltrated, and muco-pus may appear exuding from beneath it. When the deeper group is affected, there is more likely to be pus discharging over the posterior end of the middle turbinate, or flowing down the anterior wall of the sphenoid. It must be borne in mind that more than one, or all, of the accessory sinuses may be diseased at the same time, and that no one symptom is pathognomic of the inflammation of any particular

sinus; although certain symptoms are much more constantly present than others. If pus is seen issuing from the ostium of one or more of the sinuses, and recurs within a reasonable length of time, after being carefully wiped away, we know that it is either being formed within that sinus, or that the sinus is acting as a receptacle for pus which is formed somewhere else, presumably one of the sinuses of the same group lying at a higher level. If the pus in question is coming from beneath the middle turbinate and, hence, one of the anterior group, it will be necessary to determine which sinus is secreting. To do so we first make use of transillumination because this is the least formidable of the various procedures for sinus diagnosis, and occasions less apprehension on the part of the patient.

It gives us fairly reliable information as to the presence or absence of secretion, or thickened mucous membrane in the maxillary sinus. The amount of light transmitted through the sinus, illuminating the interior of the eyeball and the space between the eyeball and the inferior margin of the bony orbit, when compared with the illumination of the opposite side, is a fairly reliable index to the condition of the sinus under question, providing the opposite side is normal. If the opposite antrum is also diseased, the sinus abnormally small, or its walls unusually thick, this test will be rendered more or less useless. The same test is applied to the frontal sinus by placing the lamp under the inner and superior angle of the orbit. It is less reliable for the frontal sinus than the maxillary, for the reason that only the anterior portion of the cavity can be transilluminated and is subject to the same objections as with the maxillary sinus. Our next step would be to attempt to wash out the cavity through the normal or an accessory opening. If this is not possible, an exploratory puncture of the antrum is performed by means of the hollow needle.

If it is the frontal sinus which is in question, and we are not able to introduce the canula, this procedure can many times be facilitated by removing the anterior portion of the middle turbinate. If purulent secretion is aspirated or washed from the antrum, we can determine whether it was formed there or whether the cavity was acting as a receptacle by waiting an hour or two to see if pus has reappeared in the middle meatus. It is not likely that the antrum would fill and overflow again in that length of time. Hence, if pus has recurred in the middle meatus, it is probable that it came from either the frontal sinus or the anterior ethmoidal cells.

The frontal sinus can be eliminated by washing it out immediately after washing out the antrum. If pus is obtained also from the frontal sinus, it was undoubtedly formed there, as it could not find its way from either of the other cavities up through the infundibulum.

If the frontal sinus is negative and the anterior end of the middle turbinate has been removed, any pus recurring in the middle meatus soon after the antrum has been irrigated, must come from the anterior ethmoid cells. It is now necessary to determine whether the antrum is also secreting, in case either one, or both, of the other members of the anterior group are found to be secreting, and the pus draining into the antrum. This is accomplished by thoroughly washing out the antrum and plugging its ostium with cotton impregnated with zinc oxide ointment or sterile vaseline so that secretion cannot get in from above. Have the patient return the next day and, after washing out the cavities above, and the middle meatus, remove the plug of cotton from the ostium and wash out the antrum. If pus is again found in the antrum it must have been formed there. If it is not possible to wash out the frontal sinus, and since it is never possible to satisfactorily wash out the ethmoidal cells, we can substitute suction to elicit secretion from these cavities. If we are not able to reach a satisfactory conclusion by the methods just described, we resort to x-ray examination.

In recent years, diagnosis by means of the x-ray has made rapid strides so that this means is now regarded as invaluable. not only in determining the presence of disease, but also in demonstrating anatomical anomalies present, such as septa in the frontal sinus, ethmoid cells extending anterior to the infundibulum or into the floor of the frontal sinus. The improved technique of today makes x-ray examination one of the most valuable means of determining the condition of the frontal, anterior and posterior ethmoidal and the sphenoid cavities.

Pus issuing from the posterior ethmoidal or sphenoidal cavities makes its appearance in the olfactory fissure posteriorly, and flows down over the posterior end of the middle turbinate or the anterior surface of the sphenoid. If the posterior end of the turbinate and the mucous membrane surrounding the ostia be swollen or hypertrophied, pus may be found flowing down the lateral surface of the septum.

Acute inflammatory diseases of these sinuses rarely diagnosed as such except in a general way from the subjective symptoms and the history associated with the discharge. This accumulates in

the post nasal space in the form of crusts resulting in pharyngeal irritation. The swelling makes it next to impossible to arrive at a satisfactory diagnosis in the presence of acute inflammation of the nasal mucous membranes. In order to make a differential diagnosis, as to which of these cavities is secreting, it is necessary, in most instances, to remove the middle turbinate or its posterior portion. If the ethmoidal cells have been distended by chronic suppuration, it sometimes necessitates breaking down a portion of the posterior ethmoidal labyrinth in order to bring their ostia into view and to facilitate the introduction of the canula. If we are not able to introduce a canula we must rely upon suction.

Before resorting to any operative procedure as just mentioned, one should make an x-ray examination in order to determine the presence or absence of disease in these cavities. If either one or both are found to be diseased, it is probable that the secretion is formed within the cavity, as conditions are not favorable for one to drain into the other. It is possible, however, to have ethmoidal cells extending well back above the sphenoidal cavity. This would be shown by x-ray examination, and one should proceed, as in the anterior group of sinuses to determine which one is secreting the pus or whether it is being formed in both.

In conclusion, we wish to emphasize the importance of repeated examinations in the diagnosis of sinus disease. Many times it will be necessary to keep the patient under observation for days, and even to do considerable surgical work before it is possible to arrive at a satisfactory conclusion.

Discussion

Dr. F. E. Franchere, Sioux City—There is a degree of trepidation in the thought of discussing a paper which has so thoroughly covered the ground as the doctor's paper on the symptoms and diagnosis of accessory sinus disease. However, I believe that it will not be out of place to dwell upon two or three points. First, I would like to call your attention to what I consider an advantage in the diagnosis of these conditions, viz: a systematic diagnosis in the order of the various symptoms presented in these cases. First I would classify the symptoms as being subjective, including the history given by the patient; second, the objective symptoms—the laboratory findings, including the use of transillumination, x-ray examination, and the examination of the blood. The subjective symptoms of which the patient complains have been covered. I believe that the majority of the cases which apply to the rhinologist for relief, complain most frequently of headache. As the Doctor has stated, the location of the headache is oftentimes of the least significance. However, I believe that at times it is of highly diagnostic im-

portance. Particularly is this true in a few cases of sphenoidal sinus inflammation, of which I have observed two this winter. In these two cases the patients complained of absolutely nothing but pain and tenderness in the mastoid. The use of the x-ray examination, trans-illumination of the mastoid, tests of the hearing, examination of the tympanic membrane, blood examinations—nothing gave me any indication whatsoever of mastoid involvement. Examination of the teeth and tonsils gave nothing. No goitre present; still pain in the mastoid. Investigation of the nose showed acute inflammation of the sphenoidal sinus on the same side, and treatment directed to the conditions there relieved the symptoms completely. The pain of sinus inflammation may vary from acute suffering to merely a sense of weight and fullness, particularly in the chronic cases. I believe myself that the type of pain varies considerably with the pathology existing in the diseased cell. Objectively the Doctor has covered the subject so well that I believe it is needless to dwell upon that point further. So far as trans-illumination is concerned, I consider it of the least value of any of our objective modes of examination of the patient. That it is of value in some cases is unquestionably true, but I rely upon it very little. I believe it is of more value in the maxillary antrum, when disease is present there, than elsewhere. I rely very much upon the x-ray examination of the patient. The presence of pus in the sinus seems to have little or no effect upon the x-ray plate. I have found antrums filled with pus where the x-ray showed negative, and I have found a simple catarrhal inflammation following an opening in the antrum where the plate was positive. It would seem, then, that a swelling or thickening, hyperplasia or polypoid degeneration of the mucous membrane lining the cell, will tend more to produce a shadow and a positive result in the x-ray examination than will the presence of pus itself. This has also been proven by the injection of various substances into cells and the use of the x-ray examination afterward. A method of taking an x-ray photograph on the sphenoidal cell which has been brought into use—and I have tried it in two cases with success—is by placing the plate beneath the chin of the patient, with the light at the edge of the skull, in that way you get a much better plate for the antero-posterior cavity than you can by any other method; but the lateral plate should always be taken as well. The examination of the eyes should always be carried out. In examining a patient suspected of sinus trouble, I make it a routine measure to examine the vision, make objective examinations of the nose and the pharynx posteriorly by rhinoscopy and x-ray examination and trans-illumination in every case, and a blood examination if there is a suspicion at all of its being of a chronic nature. A few days ago a young lady came into my office for whom I had previously fitted glasses, giving her with each eye a vision of better than 20/20. She complained of pain over the left eye and in the left temple.

There was no discharge from the nose. Examination of the nose at the time the glasses were fitted showed that she had a septum markedly deviating to the right, with what I diagnosed as a cystic middle turbinate on the left side, so that nasal respiration was obstructed to quite a high degree. In testing her vision I found that the vision of the left eye had been reduced to about 1/40. I wished her to have an x-ray examination made, etc., but she objected. I cocainized the nose and gave her steam inhalations with benzoin. To keep her under observation I had her return every other day. In the course of about a week her vision had improved to nearly 20/20. This girl evidently had an infection of the left antrum with an edematous condition, I believe, of the structures about the optic nerve. Her vision is rapidly returning. The use of some hot applications was also advised over the affected parts. In a recent case of antrum infection the patient complained of absolutely nothing but severe pain in the temple. There was no tenderness over the antrum, no tenderness anywhere over any of the accessory sinuses. The internal examination of the nasal cavity was negative. But as a last resort I made an exploratory puncture through the wall of the antrum, and there was a profuse discharge of mucus, and entire relief and cessation of the pain occurred. By the way, the x-ray examination of the patient was positive for the left antrum.

NON-OPERATIVE TREATMENT OF ACCESSORY SINUS DISEASE*

HENRY G. LANGWORTHY, M.D., F.A.C.S.
Dubuque

In considering the non-operative treatment of accessory sinus disease in this symposium, I feel that I have in a very large measure one of the most important divisions of the entire discussion. It is the most important certainly from the patient's standpoint and ought to be considered from his angle in so far as seems feasible, just as much as from our own. In preparing this paper I have purposely refrained from consulting the literature too closely, or obtaining the opinion of other men in the same line of work until after the paper was completed, believing that one's own impressions are really what we are after here and that some care should be taken so that they might be presented in as free and unbiased a manner as possible.

There can be no question but that acute inflammation, no matter of what portion of the body, should be given proper time to subside on purely expectant treatment, unless urgent symptoms be

present making it imperative that an operation be performed in order to conserve a proper "margin of safety" for the patient. All patients dread operations and are willing to go to considerable lengths to avoid them, and who can say that such a viewpoint is not in the main reasonable and sane.

The "personal equation" of operators and the reaction of different individuals to the same factors differ so widely at times that surely we have here a large field for the exercise of common sense and judgment. It is safe to say that more often than not, a patient may get well in spite of an operation rather than because of it, as time makes all things possible.

Consideration of Prevention of Future Attacks Important—We may first take up with some profit in our analysis of the situation, those factors which relate to prevention of future attacks in case we are successful in tiding a patient over an existing one. If we find that we are able to prevent frequent recurrences, then we have further strengthened many aspects of non-operative treatment. As acute inflammation of the nasal cavities and accessory sinuses is so seasonal in its nature, due to violent changes of temperature, with its attendant effects on exposed mucous membranes in providing immediate conditions for great bacterial activity; in the nature of things such an inflammation will quiet down by confinement to the house in an even, warm temperature, and on purely medical measures aimed to re-establish nasal drainage and ventilation and check the severity or spread of the inflammation along the lines of treatment for the ordinary "coryza" infection. That this is so no one will deny.

We all see acute cases who may have had one or two rather bad attacks in a year or for a year or two, particularly in the winter months, who thereafter from taking better physical care of themselves in avoiding things which they know perfectly well are most apt to bring on their so-called "head cold," are able to avoid the same predicament for long stretches and even years. There is no question but what a great many work out their salvation by the expenditure of money for better heating house conditions, for instance with the house temperature constantly regulated from September to May by the modern electric thermostat, by protection of the head in cold sleeping apartments with ordinary sleeping caps, by overshoes and clothing to suit the outside weather conditions, etc. Many find themselves financially able to go to warmer climates during the worst part of our northern winter season,

*Read before the Section on Ophthalmology, Otology and Rhinology, Iowa State Medical Society, Des Moines, May 10, 11, 12, 1917.

others who cannot afford this by the simple removal of septal or turbinal obstruction, particularly of the middle meatus region, and measures aimed to relieve "catarrh," avoid recurrences in great part, and become quite satisfied with life. That somewhat expensive plans of house heating reconstruction for better physical protection and other modern conveniences and attentions which cost money may not be feasible with every individual, does not alter the value of preventive measures in the least.

Non-Operative Treatment of Acute Sinus Inflammation—While much might be said with reference to anatomical situation and peculiarities of each sinus, a generalization is all that is necessary here, and from a practical standpoint, covers the ground. I think it is fair to say in the main, that most cases of acute sinusitis will quite readily subside if given time and active nasal treatment, combining all the usual non-operative rhinological remedies commonly used by the experienced rhinologist, such as application of pledgets of cotton soaked in cocaine and adrenalin to the swollen middle and inferior turbinates, douching and spraying with the proper alkaline and oily solutions, internal remedies useful for acute coryza in the early stages—cold compresses or an ice bag occasionally to the forehead, suction, etc. Surgical interference is not at all necessary for the average acute attack. Even in quite bad recurring acute cases where one might sometimes think pretty seriously of a sinus operation, a well directed middle turbinotomy, taking in the so-called "vicious circle" of the nose, should certainly be tested out at length before going farther. In other words the fundamental principle of establishment of free drainage and ventilation which automatically provides exit for morbid materials in sinuses, is sufficient in most cases for a cure, and obviates the necessity for the administration of either autovaccines or more radical surgery. By no stretch of imagination is it justifiable to consider every acute frontal as demanding the removal of the anterior half of the middle turbinate or of every severe distinctly purulent type requiring a radical sinus operation. That a few cases may possibly need it is admitted, of course, but they are relatively few and our active non-operative measures should rule whenever possible.

Some Viewpoint of Chronic Accessory Sinus Disease—The true chronic accessory sinus cases, fortunately not relatively common, when we do get them, demand a little special consideration and their treatment must be considered from slightly different angles than the acute cases.

Many chronic cases will do pretty well following the removal of intra-nasal blocking either with or without lavage. Still severer types, however, tax our ingenuity no matter what line of treatment may be pursued.

That this is true is shown by the fact that chronic polyp formation and "cold abscess" if you will, mean serious bone involvement and carries and as such may not necessarily yield to extensive operation at all so far as a definite permanent cure is concerned. In many of these cases constitutional factors are often of as much importance as local ones. That something surgical usually has to be attempted, however, goes without saying, but I am inclined to think that the thorough removal of sufficient amounts of polypoid turbinates with perhaps a portion of the ethmoid labyrinth, promoting free nasal ventilation, together with providing a single large additional opening into the sinus at its most dependent position from the nose for the purposes of future treatment, will in a great many instances, give the necessary practical relief, and promote the welfare of the patient quite as much as some of our too extensive radical multiple sinus operations.

Chronic sinus disease has therefore its two sides in selected cases just as much as the acute type, the one wholly surgical and the other more medico-surgical, if I may use the term. When even our "master workmen" are baffled by certain aspects of these chronic cases, and by the varying conditions present, one must feel very sure of one's ground, and have in mind a definite plan of action which can be carried to a presumably successful conclusion before beginning any extensive radical operating. It is in such patients often, that one operation seems only to lead to another, either on the nose or elsewhere, and sometimes in the course of two or three years these patients have undergone various operations and are still to be found in the more or less invalid class.

Conclusions—To sum up I would say that while every acute case may in a few hours become a candidate for strictly surgical consideration, if they can be kept under proper observation, well directed, non-operative intra-nasal measures and "treating symptoms as they arise" will suffice in a great many instances, and should always be given a reasonable trial. If attacks are found to recur, the removal of intra-nasal spurs, deviations of the septum and turbinotomy, combined with a preventive study of the particular individual, will then be most apt to obviate the necessity and danger of a later radical

sinus operation. The chronic cases also should be dealt with on as rational a basis as possible. In a discussion as broad as the one here outlined, I am inclined to think that when finished, a rather remarkable unanimity of opinion along the same line will be shown relative to our handling of the general run of both acute and chronic cases and the difference in view, if difference there be, apt to result from concentration of thought more on some special case rather than on the average patient of whom we are speaking.

Discussion

Dr. S. A. O'Brien, Mason City—I think Dr. Langworthy has shown us that the non-operative treatment has a place in chronic sinusitis. As regards the cases that respond to the non-operative treatment, there are a few selected chronic cases which may respond; practically all of the acute cases I think will. As regards the treatment, in all cases it is practically the same for all the sinuses; that is, the aim of the treatment is drainage. I think by shrinking the middle and inferior turbinates with a 5 per cent. cocaine solution and adrenalin, and then applying suction, twice a day for four or five days will cure practically all acute cases. I prefer not to use the adrenalin after the first two or three applications; it seems to cause a congestion of the turbinates which makes the symptoms worse. As regards using the spray, I don't think very much of it. Personally I like to have the patient irrigate the nasal cavity with hot normal saline solution; and for the general treatment I think the administration of salicylate is about all that is indicated. The vast majority of acute cases will get relief from this treatment. Dr. Langworthy has covered the subject so well that there is nothing more I have to add.

Dr. Geo. E. Shambaugh, Chicago—Sinus cases constitute the most difficult problem with which the rhinologist has to deal. Before discussing the questions which have come up today I would like to call your attention to the fact that the term "sinusitis" is not a proper term for the word signifying inflammation of the sinus. Sinus is a noun of the same declension as iris and appendix, and the word signifying inflammation is formed by adding the suffix *itis* to the noun stem. The noun stem of sinus is *sinu* and the correct term is *sinuitis*. The question of procedure in making a diagnosis of sinus trouble is rather an important one. It is not necessary, as one speaker has suggested, that one follow the same routine in all cases, which should include an x-ray examination. In a great majority of cases where one has reason to suspect a possible accessory sinus trouble, the diagnosis can be made without going to the expense of having an x-ray plate made. The intra-nasal examination and the transillumination in most cases give us a positive diagnosis, either excluding the possibility of an accessory sinus trouble or diagnosing the existence of this condition. In cases where these examinations leave us in doubt,

the x-ray is of great value. Transillumination gives more assistance in the diagnosis of a maxillary sinus trouble than it does in a case of frontal sinus, and fortunately the skiagraph is able to give us an accurate idea of the conditions of the frontal sinus. In regard to the question of treatment of sinus trouble, we have again a very difficult problem. I have seen cases of chronic accessory sinus suppuration where long continued surgical efforts have failed to eliminate the entire trouble. Scar formations in the region of the ethmoid in such cases cover pockets still secreting pus and one finds it practically impossible to make sure of the complete eradication of such foci without subjecting the patient to the possibility of intra-cranial extension. As a rule the ethmoid and sphenoid sinuses are the ones most easily cleaned up by intra-nasal work. The frontal sinus is the most difficult problem. An external operation on the frontal sinus is of course contraindicated except under the very exceptional conditions where, after the most careful and painstaking intra-nasal work, the patient still suffers from severe pain, or where symptoms develop indicating a possible intra-cranial extension. Intra-nasal operations for the relief of frontal sinus trouble, if undertaken by the specialist, that is the man who has mastered the surgical anatomy of this difficult region, is successful in almost all cases. In a few the discharge may not cease entirely, but even in these the relief from pain and subjective discomfort is satisfactory and the free drainage prevents the likelihood of an intra-cranial complication developing. As regards the maxillary sinus there is a long standing belief that in order to get satisfactory results permanent drainage must be made near the front of the sinus. This is a mistaken idea. A large enough opening at the top of the sinus, that is in the middle meatus, to allow free ventilation, is just as efficient for the cure of a chronic maxillary empyema as is a similar opening in the inferior meatus. The opening in the middle meatus through the so-called nasal fontanelle is in the hands of an expert very quickly and very readily carried out with much less shock to the patient than an opening lower down. Subsequent treatments are unnecessary as a rule, but if because of the profuse discharge, irrigation seems advisable, this can be carried out very easily by the patient himself.

Dr. C. H. Lauder, Grinnell—I would like to ask the members of the section—especially Dr. Langworthy—in regard to the use of nasal sprays in acute sinusitis: whether he would recommend the use of a nasal spray or condemn it. I may be a little bit peculiar on this subject, but I most certainly condemn a nasal spray, in all kinds of acute conditions of the nose. Several years ago I used a nasal spray after nasal operations, but I found that I got infections of other sinuses—infections of middle ears; and since then I have used a nasal spray very little, and I have been very much gratified with the results, not having infections of other sinuses. Another thing that I have insisted upon with my patients is not to blow the nose hard. I have been laughed at, but I

have heard mothers say: "Now, Johnny, blow your nose—blow it hard!" and I really feel that there are many cases in which other sinuses are involved where if the nose had not been blown hard, or if we had not used a spray, we would have much less sinusitis. I would like to hear what the members of the section have to say in regard to this, especially with regard to the use of the nasal spray.

Dr. H. G. Langworthy, Dubuque—I think it is just a little difficult to answer a question like that offhand without a good deal of mature thought. I think the action of a nasal spray varies a little with different individuals and conditions. It is certainly, in the hands of most patients, a simple thing for them to spray the middle turbinate region with a weak solution of cocain and adrenalin. While in some cases it may seem to aggravate conditions a bit, as a general rule it is decidedly beneficial. There is no question but what the nose needs treatment and that spraying is logical treatment. By varying our sprays, our method of application, or changing from alkaline to oils, etc., we can surely overcome most difficulties. I think that is as far as I would care to go, offhand, in a discussion of nasal sprays. In regard to blowing the nose, it seems to me the thing is to free the nose of masses of offensive, stringy mucus and pus. It is certainly a tremendous relief to the patient to spray the nose with an astringent solution and then blow out offensive material; it relieves the head symptoms for the time being markedly; and if they are careful not to close the nose, but to blow into a towel with the mouth open I have seldom seen any trouble.

Dr. E. R. Lewis, Dubuque—There are two things that I want to speak of. One is the use of a very, very fine tiliform—very bendable—probe for diagnostic purposes, tipped with a very fine wisp of cotton—hardly more than just a few strands. I have gotten a great deal of information in three sinuses **through the normal opening**, the sphenoid, the frontal and the maxillary, by the use of that probe. It is easily possible to demonstrate in the walls lining those cavities. This probe will encounter a very rough, honeycombed spot. The other thing that I want to speak of is in the matter of therapy. In the sub-acute case a mixed type, in the absence of syphilis, the introduction of a silver tube through the normal opening of the frontal, maxillary or sphenoidal, and the introduction through that tube by the use of the rubber bulb of an ordinary eye dropper, transforming that into a syringe, of as much 50 per cent. argyrol or silvol as possible, filling those sinuses full and leaving it there, will get very satisfactory results, and I think is well worth mentioning in this connection.

Dr. Chas. G. Baird, Cedar Rapids—I would like to ask the members what end results have been found in patients who have had their tonsils taken out because of rheumatism and have apparently been cured of their little local troubles, such as a stiff shoulder, etc., and have then developed sinus trouble.

Dr. Franchere—In this matter of sprays we hear alternately absolute condemnation of the nasal spray and unqualified recommendation of it. I believe the truth lies between. Patients will come into the office with an acute rhinitis, complaining of a fullness in the head and a stuffiness that is not relieved by blowing the nose. Lavage does not produce relief, but a careful use of a spray with a low pressure will oftentimes give these patients a great deal of comfort, and if that is followed up by an oily vapor containing menthol and possibly a little cocain, while you are not curing your patient of anything, he will be extremely grateful for the comfort you have given him. I decry the use of sprays in acute inflammations of the nose, unless, as I said, the pressure of air is low. You do not want any stimulation, but if you get an old case of atropic rhinitis, with a formation of crusts that are not relieved or removed, as is often the case, by the use of irrigation, there an aqueous spray under a high pressure of, say, forty pounds, will produce results. There is where you want stimulation, and particularly is that true in old standing cases of naso-pharyngitis, where you get the accumulations of mucous in the naso-pharynx. You can direct the pressure upwards there, and you serve the double purpose of stimulating the mucous membrane and removing the mucous at the same time. I would never dream of using a spray at all in cases of operative procedure, only a lavage, and that only with a normal saline solution—no antiseptic.

OPERATIVE TREATMENT OF ACCESSORY SINUSES OF THE NOSE*

F. E. V. SHORE, M.D., F.A.C.S., Des Moines

In considering the surgery of the sinuses of the nose, I assume the necessary non-surgical efforts for the relief of early inflammatory conditions have failed to procure the desired drainage or resolution, and these failures necessitate the surgical measures which I am to consider today. Infections of the sinuses may be acute or chronic; and although the acute varieties usually yield to non-surgical measures, the amelioration of retention symptoms, diminution of discharge, or prevention of metastases in the chronic varieties, requires operative interference in all cases. Owing to its location, its more intimate relation to the brain, and its not infrequent direct communication with the ethmoid, sphenoid, and maxillary sinuses, the frontal sinus is necessarily the most important.

In acute frontal sinusitis, sufficient drainage may usually be obtained by infraction of the middle turbinate, or resection of its anterior portion.

*Read before the Section on Ophthalmology, Otology and Rhinology, Iowa State Medical Society, Des Moines, May 10, 11, 12, 1917.

To fracture the middle turbinate, one blade of a pair of scissors is passed vertically upward on either side of the anterior attachment of the middle turbinate. The attachment is severed, and sufficient pressure applied against the unciform process to force the turbinate to the median line until fracture occurs. If this procedure fails to permit drainage, the anterior portion of the turbinate should be removed by a snare, or Hartman forceps. If either or both of these measures fail, it will be necessary to open the sinus by one of the intra-nasal methods. The three intra-nasal operations usually performed are those of Good, Ingals and Halle. Those of Ingals and Halle retain the turbinate, but the opening is made and enlarged by a dental bur. I must confess a feeling of fear of so dangerous an instrument in such delicate surroundings, and as a consequence have confined my intra-nasal operations to that of Good. The Good operation necessitates the removal of the middle turbinate, but this has but slight significance when one considers the universal invasion of the anterior ethmoidal cells in frontal sinusitis.

Direct infective communication to the brain through the divided olfactory filaments appears rather fanciful. The turbinate having been removed, a probe can readily enter the frontal sinus in about 60 per cent. of the cases. In about 40 per cent. the hiatus terminates blindly—the frontal sinus communicating with the nose through the ethmoid ostium. The unciform process and ethmoid bulla are the landmarks for the intra-nasal operation.

The ethmoid bulla is opened by biting forceps; curette or shave, and the ethmoid cells obliterated. The smallest rasparator is introduced and the anterior nasal spine filed. Each rasparator is replaced by one of increased size until sufficient of the spine has been removed to permit free drainage. Mosher has modified this by enlarging posteriorly and laterally toward the ethmoid, leaving the internal crest undisturbed; I have adopted this modification and believe it a distinct advantage.

Curettement of the sinus completes the operation. Unfortunately the free opening which you have made does not always remain permanent. Ingals and Halle introduce a metal tube, which they claim prevents closure of the opening, but experience with metal tubes in other parts of the body, has not been sufficiently ideal to warrant my using them in this particular locality. In very many cases, owing to divisions of the sinus, inaccessible pockets, and necrotic areas, the intra-nasal operation proves unsuccessful and resort

must be had to some form of external operation to relieve the suppuration. In all cases of cerebral complication, or proptosis, the external operation should be performed. The Killian or some modification is the usual choice. It may with advantage be preceded by the removal of the ethmoid and opening of the sphenoid, but if time is paramount it should not be wasted on such preliminaries. The Killian has for its object the removal of all polyps, diseased membrane, and necrotic areas; and the removal of the entire floor of the sinus, that no pus or other secretions can accumulate. The essential features of the operation are the removal of sufficient frontal bone above the supra-orbital ridge to permit free access to all parts of the sinus, the removal of all abnormal conditions, the retention of a broad bridge, with its periosteum, and the removal of the entire floor. Although Killian in his demonstration on the cadaver at Philadelphia was very solicitous about injury to the trochlea and the resection of the maxillary process without injury to the mucous membrane, it has become a matter of common observation that disturbance of the trochlea is not followed by permanent diplopia, and injury to the mucous membrane does not in the least affect the end-results.

Unfortunately the radical frontal sinus operation when well and carefully performed, has been followed by many fatalities, and besides it is not always successful. Notwithstanding all its dangers and its occasional failures, the Killian radical sinus operation has proven one of the greatest contributions to nasal surgery.

At the meeting of the American Medical Association in Detroit, Dr. Lothrop presented a new operation which consisted in entering the frontal sinus through a small opening above the inner canthus. The inner nasal crest is now removed, then the floor of the frontal sinus, then the perpendicular plate of the ethmoid which forms the anterior nasal septum; continuing upward, the plate forming the partition between the two sinuses is removed and the operation terminated by removing the floor of the opposite sinus through the same opening. I have had no experience with this operation, but see very serious objections to infecting a healthy sinus by removing the only barrier it has against invasion.

Owing to its central location, and its intimate relation to surrounding parts, the ethmoid usually becomes involved in its neighbors' troubles.

The orbital plate of the ethmoid forms the outer wall of the ethmoid labyrinth, the opening of which, either by dehiscence or surgical accident, occasionally leads to infections of the or-

bital cavity with its attendant dangers. Of greater importance, however, is its relation to the cribriform plate, the injury of which, following the removal of the anterior ethmoidal cells, too frequently results in brain and meningeal complications. A thorough knowledge of the normal bulla, unciform process, and relative position of the components of the ethmoid labyrinth, must of necessity precede any attempt at surgery of this location. If drainage of the frontal sinus is all that is desired, the removal of the anterior portion of the ethmoid may be all that is necessary, but in all cases of chronic sinusitis the eradication of all infected cells will necessitate the removal of the entire ethmoid capsule. The preliminary steps of this operation, which constitute the removal of the middle turbinate body, may be performed after Ballinger. I have followed Luc's method in most of my cases, having found it quite rapid, safe, and when properly cocaineized, as free from pain as the Ballinger or other procedures. The turbinate body is first removed by some form of cutting forceps.

The bulla, which is exposed on the removal of the turbinal body, is entered by forcibly crushing with a Hartman forceps. The remaining posterior cells are removed to the anterior wall of the sphenoid. Having removed the posterior cells, the anterior cells may be removed until the plate is reached, care being taken not to injure this structure which forms the only protection to the cribriform plate. The Ballinger method is equally satisfactory in the hands of those accustomed to the use of his knives. Whether the nose shall be packed or not is quite immaterial. I have used the pack in many cases without an untoward symptom, but its removal is annoying, and is followed by some hemorrhage. As the hemorrhage is rarely severe without the pack, I have largely discarded its use.

In the majority of cases of ethmoiditis, there is some involvement of the sphenoid sinus, and the enlarging of its ostium adds but little to the dangers of the case, and usually affords much relief to the patient, and the avoidance of a secondary operation at a later date. It is usually not necessary to remove the entire anterior wall of the sphenoid, as the enlarging of the opening permits sufficient drainage, and avoids the dangers of hemorrhage and infection which occasionally occur where the entire anterior sinus wall has been removed. In the acute infections of the antrum, where drainage fails to take place through the ostium, a needle puncture directed backward and upward about the center of the lower surface of the inferior turbinate, with lav-

age and negative pressure, usually suffice to terminate the trouble. Should it fail or the case be one of chronic nature, the radical intra-nasal or the combined canine operation should be selected, but I have never seen a case where it seemed the alveolar route was desirable, not that recoveries do not occur by this means, but the mixture of pus and victuals has never appealed to my sense of cleanliness, and the antrum was never a very inviting location for the digestion of food.

The Canfield intra-nasal has proven very satisfactory in my hands, and is of much less magnitude than the Denker, and is the one I usually perform. The Kuster operation, which consisted in making a large opening in the canine fossa, has but little to recommend it, and has been superseded by the Denker which combines the Canfield and Kuster. It does not interfere with the normal respiratory action of the nose, permits the examination of all parts of the antrum, the thorough removal of polyps and necrosed areas of bone, and is painlessly performed under cocaine and novocain. The Canfield is more easily performed, much less formidable, preserves the normal function of the nose, permits free inspection of all parts of the cavity, and easy access for the removal of polyps and necrosed areas, except the posterior inferior angle, where a pocket is occasionally found which is difficult to reach by the Canfield method. Failures in either operation have usually been the result of overlooked necrosed areas in the anterior superior angle. Destructive as these operations on nasal accessory sinuses may seem, and although at best they cannot be considered as providing a healthy nose, I have opened all the sinuses in two cases, with a fairly healthy appearance of the nasal chambers, or cavities if you please, and a very satisfactory degree of comfort.

Discussion

Edwin Cobb, Marshalltown—Dr. Shore, I believe, has covered this subject in a very thorough manner. There are just a few little points and facts that I might emphasize. In these acute cases I believe it is the opinion of the most eminent men that simply removing the anterior portion of the middle turbinate, along with suction, sprays, etc., cure about 90 per cent. of these cases of acute frontal sinusitis. Speaking again of these cases of a chronic nature which must be operated upon, I believe we should depend a little more upon our x-rays; in other words, I believe an operative case of any kind in the nose, especially on the frontal sinus, should have a careful radiogram taken, and in preference have a stereoradiogram, where we get the depth of these cavities as well. Also in our sinus cases many times we can

place a probe which we think is in the frontal sinus and where the radiogram shows it is simply in a large anterior ethmoidal cell. In those cases it is well to introduce the probe and then have another x-ray picture taken, to be sure that this probe is in the frontal sinus. The Wassermann test has been brought out. In the event of a positive Wassermann I believe we should delay the operation in some of these cases.

THE END-RESULTS OF THE TREATMENT OF INFLAMMATION OF THE ACCESSORY SINUSES OF THE NOSE

L. W. DEAN, M.D., F.A.C.S., Iowa City

The surgery of the accessory nasal sinuses is far from being perfected. The progress in this work brings us nearer the goal every year, but we are still far away from the final ideal treatment.

With our present procedures, the end-results are dependent more upon the pathological condition than upon the kind of treatment instituted.

There are certain diseased conditions which have a decided bearing upon the end-results in all kinds of sinusitis, and it is my intention to take up some of these.

Tuberculosis—Pulmonary tuberculosis especially, and tuberculosis in other portions of the body have a decided influence upon the end-results of the treatment of sinusitis.

It makes no difference whether the sinusitis is acute, subacute or chronic, the course and final result will be greatly influenced by any marked tubercular condition.

In tuberculous subjects, the sinusitis may be a tubercular lesion or it may be an ordinary infective process. In the first instance the examination of the bone if it is diseased, and the lining of the sinus reveals the presence of giant cells. The tubercle organisms may be found in the nasal discharge or in the fluid from the sinus. The injection of a guinea pig is positive for tuberculosis. Usually there is involvement of the glands of the neck. A marked intranasal tubercular ulceration sufficient to make the diagnosis, may be present. Such a condition is naturally one which carries a very bad prognosis so far as the end-result is concerned, irrespective of the kind of treatment employed.

Also in tuberculous patients we find sinusitis which is not tubercular. This is the common form of sinusitis in tuberculous subjects. Sinusitis is much more common in tuberculous patients than in health individuals. It is usually nothing

more nor less than an ordinary infection of the sinuses in individuals with a tubercular lesion. If this sinusitis be acute, subacute or chronic, the course of the disease will be much more prolonged than a similar condition in a non-tuberculous patient. An ordinary acute sinusitis will be exceedingly difficult to eradicate. A chronic sinusitis will probably not give a good result. A subacute sinusitis is very liable, in spite of all kinds of treatment, not to give a good result. These sinuses must not be considered to be tubercular. The sinusitis not due to the action of the tubercular organisms. The trouble is due to the ordinary streptococcus, staphylococcus or what-not in an individual where the resistance is below par. In no class of patients have we had more disappointing results than in individuals with a pulmonary tuberculosis.

Especially have we had a bad end-result if the individual is not able to change climate as a therapeutic procedure.

Syphilis—The effect of syphilis upon the end-result of the treatment of sinusitis is a very bad one. In chronic sinusitis it is suggested that it is advisable not to operate because of the danger of a syphilitic osteomyelitis following an operative procedure. So far as the antrum and the ethmoidal sinuses are concerned, I have been accustomed to neglect this dictum. So far as the frontal is concerned, I would consider it extremely hazardous to attempt an external operation in a case of sinusitis in a syphilitic subject.

In spite of the most prolonged and intensive syphilitic treatment, cases of sinusitis in syphilitic patients will not do well. Not only will the discharge continue from well drained sinuses, but there will be an intensive crust formation that is exceedingly disagreeable, and almost impossible to combat.

Syphilis is so often the cause of a bad end-result in the treatment of sinusitis that an exceedingly bad end-result is frequently an indication of the presence of syphilis.

Ozena and atrophic rhinitis certainly are important agents in the production of a bad result in the treatment of sinusitis. It makes no difference what the etiological factor of ozena or atrophic rhinitis is, the practical point remains that the treatment of the sinuses in these conditions gives a very unsatisfactory result to the patient. The crust formation will continue and the odor will persist. In short, sometimes, in ozena, operative procedure upon the sinuses seems to make the condition worse.

Change of climate has much to do with the successful treatment of sinusitis.

As I mentioned earlier in the paper, tuberculous subjects with acute sinusitis, and with the best of treatment in this climate, frequently will not do well. During the winter, fall, or spring months, if the patients can be sent to a warm and dry climate, the sinusitis will usually clear up; that is if it is acute. I know of no better treatment for acute sinusitis in the winter than to escape our very disagreeable Iowa climate. Many patients will not improve except by such a procedure. Hence, I say that if the financial circumstances of the patient will permit of travel, and allow him to take advantage of the change of climate, the end-results will be markedly better.

Certainly in the chronic cases where intra-nasal drainage has been established, with the complete disappearance of the discharge during the summer months and its reappearance in the winter, the result is dependent on whether the patient can go south during the bad months or whether he must remain in this climate.

The age of the patient is an important factor in all kinds of sinusitis. It is especially marked in the chronic.

Naturally in an infant of one, two or three years of age, a chronic sinusitis is not of many years duration. In an infant who has had apparently from the history of the case, several years of chronic sinusitis or even in a young child, I have been astonished at the rapidity of the clearing up of a very bad foul smelling process by a simple intra-nasal drainage.

I am not sure but that the thickened membrane that lines the antra, which seems to be present in children and not in adults, may not have something to do with this rapid clearing up.

Irrespective of the sinus involved, the presence of a marked chronic osteomyelitis involving bone which cannot be removed, gives a very bad prognosis. It makes no difference whether this bone lies along the base of the skull, or in the roof of the frontal sinus, or surrounding the antrum, if it is to such an extent that it cannot all be removed, the end-result will probably be bad.

I will briefly consider the end-results of the various sinuses.

Maxillary sinus—The prognosis in maxillary sinusitis depends; first, upon whether the cause can be removed; and second, upon the pathological conditions in the sinus. Unless the cause is systemic, we should be able to remove it.

I have had two patients where there was no syphilis, and no tuberculosis and still so much of the bone of the superior maxilla on each side was diseased to such an extent that it was quite

impossible to remove all of the infected bone. Many cases of chronic empyema of the antrum after the very best and most radical treatment, will continue to have a purulent secretion collecting in the antrum and discharge in the nose. This is considered by many, to be a cured case. This is not true and the patient will be bothered throughout his life by the constant drainage into the nose and frequent dropping from the nose, especially when the head is tipped forward. When such a result has been secured, it may be the best that can be done with our present knowledge of treatment, but the end-result is not good.

Frontal Sinus—What has been said about the Highmorian antrum is in a certain sense true of the frontal. In many cases, in spite of all treatment, a more or less constant leakage remains, and we do not have a cure in the sense that there is a return to normal.

I know of numerous patients who have been taken care of by the very best rhinologists in our country, who find it necessary to go south every winter in order to avoid the disagreeable results from an old case of frontal sinusitis. Most of these are patients that if they were operated upon by a radical external method, might be further benefited. The danger from the radical operation, however, would be greater than the danger from allowing the condition which they have, to exist.

Owing to changes in the mucous membrane lining the frontal sinus, the return to normal is prevented. Improvement will take place up to a certain point and then cease.

An operation which will obliterate the frontal sinus should give a cure so far as the sinusitis is concerned. The end-result, however, in such a case, even if every thing goes well, may be so disagreeable as to leave the patient in a worse condition than if thorough drainage was established and a certain amount of discharge allowed to continue into the nose.

The end-result in frontal sinusitis complicated with extensive osteomyelitis, even with the most radical operation, is problematical.

Ethmoidal Labyrinth—The end-result in sinusitis of the ethmoidal labyrinth depends very much upon two things: first, the amount of destruction of tissues necessary to produce in order to drain all of the diseased cells; and second, whether or not we can drain all of the diseased cells.

If the trouble can only be eradicated by the obliteration of every ethmoidal cell, the chances are that there will be a thickened, scarred, se-

creting membrane left that will result in a discharge or in a crust formation.

In most operations a few cells will be left in extensive cases which will in themselves continue the suppurative process. If the inner table of the skull is involved, the end-result is always bad.

Sphenoidal Empyemia—In isolated sphenoidal empyemia the end-result should always be good. There is no reason why the sinus should not be completely obliterated and all trouble eradicated unless there is an extensive osteomyelitis of the sphenoid bone.

Discussion

Dr. R. F. French, Marshalltown—I am certainly glad that in such a well-arranged symposium Dr. Dean gave us the final paper, because in all his writings he seems to reach the pith of the matter. I was very greatly struck with his statement that the end-results depend upon the pathology present. In changes of the mucous membrane of the sinuses by diseases of inflammatory origin, we have the acute and the chronic type. In the acute type usually it is one of infection, as Thompson has been able to isolate the micrococcus and the pneumococcus; but it does not seem possible that in our chronic infections, where we have a culture box exposed to reinfection, that we will have a single type of infection; it is always a mixed infection. And as Dr. Shambaugh said in a paper published in the Annals of Otology last year, where we have a chronic infection we are very apt to have several of the sinuses infected, and truly it will depend upon the pathology of the nose as to the result that we get in these infections. In children it seems to me that some of the authors do not lay emphasis enough upon the infection of the sinuses. We find children with a constant discharge that will cause an excoriation of the upper lip, and by simply removing the enlarged tonsils and adenoids, this will clear up; but there are many that will not. In these cases the x-ray will help us out. Lemoyez says that if we could see, diagnose and treat our acute sinuses, we would not see more than two-thirds as many chronic cases of sinuitis. Certainly it is up to us as rhinologists to be more careful in our diagnosis, especially of the acute type. There is another side—the patient's side. We should aim our operations and operative procedures in such a way that we would not take as much of the patient's time, and make the time under treatment as short as possible, also as easy on the patient. As Dr. Dean said in his paper, especially in the tubercular and syphilitic types, oftentimes we cannot follow the operative procedures that are best indicated, but must simply follow them along with appropriate treatment. I think this is a point well to be considered by all.

THE VALUE OF HYGIENE AND SANITATION IN CAMP

MAJOR THOS. F. DUHIGG, M.D., Des Moines

The mobilization of the troops on the Mexican border in the summer of 1916 afforded an excellent opportunity to test the value of well understood scientific principles. Its value was enhanced because 150,000 of those troops (the great majority) were national guard troops, of which 40 per cent. were recent recruits. Also, by the fact that immediately following the mobilization, the weather was intensely hot, and the troops were sent to a subtropical climate at a season of the year when physical resistance is supposed to be reduced, and general conditions are popularly believed to contribute to a high morbidity, and a high rate of mortality from disease.

It is interesting to know that in spite of all these adverse conditions, the health of the troops was maintained at a remarkably high state of excellence, the morbidity and mortality probably being lower than among the the same number of men at home, or than it would have been among the same men at home and engaged in their ordinary occupations.

The specific information which I shall give relates entirely to the 1st Iowa Brigade which included more than 4700 men, of which about 1900 were recruits. Only eight deaths occurred, none of which were due to so-called preventable diseases. The causes of the eight deaths were as follows:

Drowning	4.
Gun shot (accidental).....	2.
Suicide	1.
Sudden death (probable angina pectoris).....	1.

Comparison of these figures with the mortality figures of the Iowa troops in the Spanish-American War, shows the truly wonderful results of modern hygiene and sanitation. In the Spanish-American War, the total number of troops was 5300, of which slightly more than half were recruits. The total number of deaths from disease was 163, of which 135 were due to preventable diseases as follows:

Typhoid fever.....	125.
Small-pox	3.
Malarial fever.....	2.
Measles	2.
Meningitis	2.
Dysentery	1.

The deaths by regiments in 1898 were as follows:

Forty-ninth Regiment.....	55 Deaths
Fiftieth Regiment.....	32 Deaths
Fifty-first Regiment.....	41 Deaths
Fifty-second Regiment.....	36 Deaths

The 50th and the 52nd Regiment did not leave the United States, and lived under conditions that approximated those on the border, except that the climate of Tennessee and Florida where they were located is a more pleasant climate than that of southern Texas. Those two regiments lost from disease a total of sixty-eight men, of whom sixty-six died of preventable diseases. Sixty-two of these were due to typhoid fever. The 50th Regiment lost thirty-two men by death from disease, all but one of which were due to typhoid fever. Those two regiments were not in service in 1898 quite as long as the average length of service of the various units of the Brigade in 1916 and 1917.

The system by which the health of the Brigade was preserved with but eight deaths, all from non-preventable causes, occurred among 4700 men during eight months of service was as follows: When the troops were mobilized, the men were all given a re-examination to exclude all those falling below a certain minimum physical standard. Every man, not previously immunized, was given the typhoid vaccination of three doses of killed typhoid bacilli at intervals of one week. In addition, every man was vaccinated against small-pox. Most of the vaccination was completed while at the mobilization camp at Des Moines.

I shall consider the subject of sanitation under the following heads: Food, water, soil, disposal of excreta and garbage, drainage and vegetation, and prophylaxis.

It has been said that an army marches on its stomach. The importance of a proper ration properly prepared is obvious to those with scientific training. A ration is the food allowance of a soldier for one day. The army ration is composed of a meat, a bread, and a vegetable component, coffee and sugar component and seasoning component. The meat component includes fresh meat, mutton, bacon, canned meat and fish, varying from fourteen to twenty ounces, according to which is issued. The bread component includes flour, soft bread, hard bread and corn meal in amounts varying from sixteen to twenty ounces per day. The vegetable components include beans, peas, rice, hominy, potatoes, onions, canned tomatoes, and all kinds of fresh vegeta-

bles when obtainable. The fruit, coffee and sugar and seasoning components are liberal.

This ration yields about 3500 calories and can be changed to suit the requirement of a temperature, a frigid or a tropical climate. The meat component is increased in a frigid climate, while, in a tropical climate the meat component is reduced and the vegetable increased. It is the most liberal and flexible ration of any army in the world. On certain articles of the ration, a saving is allowed. That is, if the company does not consume the full allowance of a certain component, the cash value of it can be drawn at the end of the month. The money obtained from this source can be used for the purchase of any desirable food in the open market. In this way eggs, butter and milk which are not part of the regular ration, may be purchased. The ration is more than men can eat. It is desired that they make a saving with which to buy other articles of food to supplement the regular ration.

The food is inspected daily by medical officers to insure cleanliness and economy in its care, handling and preparation. It is preserved carefully from dust and flies. Fresh food is kept on ice when the ice is obtainable. An old barrel or box buried in the ground is an excellent improvised ice box in permanent camp. No edibles were allowed sold in camp except from exchanges and stands that were screened and inspected daily by a medical officer.

The water for the troops at Brownsville was from the municipal water system. It was good water, delivered through pipes to the kitchen at the head of each company street. Only on two occasions of short duration did this water need special treatment. It was caused by fine clay particles being pumped into it, causing extensive cloudiness which had to be removed by filtration and sedimentation. On the march or during maneuvers away from the permanent camp, when water from a source of known purity cannot be obtained, it must be boiled or treated chemically. The most practical system is by the use of the Lister bag. This is a water tight canvas bag with a capacity of forty gallons which can be made free from pathogenic bacteria by the use of one gram of hypochlorite of lime. Canteens are filled from this at the beginning of the day's march.

The soil in the vicinity of Brownsville is a very fine clay. It contains no rocks or gravel, not even a pebble. The particles are extremely fine and when wet, form an unusually pliable mud. It is excellent for adobe formations. When the surface is wet, it effectively seals the

soil water tight, making it impossible for the soil to become wet beneath the surface. For this reason the soil does not get ventilation, and vegetation is scant and the country not very productive.

The garbage was disposed of at first by the use of adobe pits molded and shaped like a saucer or an oblong bowl. Fire was kept constantly in this pit where the garbage was burned. This method was not entirely satisfactory because of the moisture left in the garbage even after the most careful draining. Following this, incinerators were constructed of brick. The size varied with the amount of garbage to be consumed. For a company of seventy men it was two feet high, two feet wide and about eight feet long. One end was closed and near it was the chimney. Next to this was a large evaporating pan the full width of the incinerator, six inches deep and about four feet long. The other end of the incinerator and that portion of the top not covered by the evaporating pan, were left open. The open part of the top contained iron cross bars forming a kind of open grate upon which wet garbage was dried.

Human excreta was disposed of as follows: A latrine pit was dug very deep—eight to ten feet—eighteen inches wide and ten feet long. Over this was placed a box two feet high which extended beyond the edges of the pit. It contained five seats with hinged lids which fell automatically over the opening in the seat when not in use, the whole being fly tight. This top was removed daily and the pit burned out with straw and oil. By this method the pit filled very slowly, requiring from three to six months before the constructing of another was necessary. Urine passed into a metal trough connected by iron pipe with the pit. At night urine was collected in receptacles placed in the company street, and marked with a red light.

Animal excreta was raked from the picket line twice daily and hauled each morning to a designated place about a mile from camp, placed in windrows and burned under the personal supervision of a non-commissioned officer. The surface of the picket line was burned over with straw and oiled once a week, and in very hot weather twice a week. The most rigid measures were enforced to prevent contamination of the soil with any organic matter. Parts of the camp about tents were raked or swept daily and the entire camp was raked once a week, the material gathered, being hauled away and burned.

The camp was drained as well as possible, and during the wet weather any collections of water remaining longer than twenty-four hours was

covered with oil. Vegetation which was thick near the ground, and which interfered with the free passage of air and sun light, was removed for a distance of at least 100 yards from the boundaries of the camp.

The use of mosquito netting during sleeping hours was compulsory, a nightly inspection being made to see that the order was followed.

On the subject of clothing I wish to make one point, and that is that wool socks are the proper foot wear for all seasons. Their use is imperative for those who are on their feet much, either standing or walking. When moist or even wet, wool does not pack hard but retains a cushion-like quality which reduces trauma; it does not cling to the surface but slides freely, and it is as great a protection from heat as from cold.

Bathing facilities were provided by the installation of shower baths to which a water heater was attached when the weather became cooler. The bath water drained into a pit of ten feet deep. This was banked around the edge to protect it from storm water. The floor of the bath house was set well up from the ground and the siding was omitted for the lower twelve inches. This allowed thorough ventilation. The surface of the water was oiled at regular intervals.

The men's exercise was on a graduated scale which increased with their endurance. At first a march of three or four miles was more than enough for some. It was increased to six, eight, ten, twelve and finally to fifteen and twenty miles in a day. I am personally familiar with isolated cases where a march of twenty-nine or thirty miles were made in a day without producing any apparent unpleasant effect. The ability to march fifteen miles in a day, with full equipment, can be attained only by excellent training which gives due consideration to hygienic matters, including food, clothing and careful physical training. On the march, men march fifty minutes and rest ten minutes each hour. Under ordinary circumstances, two and a half to three and a half miles, with an average of about three miles an hour, is considered good.

Venereal prophylaxis was carried out as follows: The value of celibacy was taught and preached at every opportunity with good effect. Failing in this they were required to report immediately after exposure, to the prophylactic tents at their respective camps. Here, under the supervision of a sergeant, the parts were thoroughly cleaned with soap and water, the urethra injected with a solution of protargol and the surface all about and including the pubic region, adjacent surface of thighs and scrotum, was

treated with 33 per cent calomel ointment. His name was listed in a book which was inspected only by the dispensary sergeant and the surgeon. Twice monthly at unexpected times, every man was inspected for venereal diseases. Those who developed venereal disease without having used the prophylactic and being registered in the prophylactic record book, were liable to court martial and confinement at hard labor without pay for any period up to three months. This method will prevent at least 75 per cent. of venereal disease when used within two hours after exposure. If used immediately, it would undoubtedly prevent 90 per cent. After four hours, its effect is very much less.

The extraordinary results of this system may be judged from the following, including the Iowa Field Hospital, and the 1st and 3rd Infantry, Iowa National Guard. For the reports of the regiments I am indebted to Major Martindale, surgeon of the 1st Infantry, and to Major W. S. Conkling, surgeon of the 3rd Infantry, Iowa National Guard. The Iowa Field Hospital Company including sixty-five men, one-half of whom were recruits and almost one-half of whom were under twenty-one years of age, of which I had command for seven months, had only three cases of gonorrhea in that time. Only two cases developed at Brownsville, and neither of them had used the prophylactic. Both of them were tried and confined at hard labor. No cases of syphilis developed in this company. The 3rd Iowa Regiment of approximately one thousand men, had only twenty-six cases of gonorrhea develop on the border. No cases of syphilis were contracted on the border. The 1st Iowa Regiment with approximately one-thousand two hundred men, developed only forty-four cases of gonorrhea and no syphilis while on the border. This is undoubtedly fewer cases than would have developed among the same men had they remained at home in their ordinary surroundings and at their usual occupations. The 1st Regiment gave one thousand three hundred and the 3rd Regiment one thousand seven hundred and sixty prophylactic treatments during the entire period of encampment on the border. Each regiment returned with fewer cases of venereal disease than they had when they left Des Moines in July, 1916.

To those ignorant of camp life, who believe it to be surrounded by increased physical and moral hazards, it may be a relief for them to know that men are surrounded by more safeguards and are looked after with more concern to their immediate and future welfare while they are in camp than at home. Their food, water, clothing, exer-

cise, and mental and moral training are matters which are carefully and scientifically regulated. The government recognizes this as a measure of wise economy, for every man sick or disabled is an added expense. The men, regardless of what their future environment may be, will find their knowledge of practical sanitation, gained while in the military service, of immense usefulness to themselves and those with whom they are associated or for whom they may be responsible.

Discussion

Major W. S. Conkling, Des Moines—I have enjoyed Major Duhigg's paper very much. He has covered the ground so thoroughly I do not know of much to add. There is just one point I wish to make, and that is the difference in the degree of co-operation between the medical officers and the regular army officers, as it existed in 1898 and during our mobilization on the border last summer. In 1898 the recommendation of the medical officer had practically no weight; last summer the recommendation of a medical officer was absolute law, and woe to the officer who did not obey. Therefore we as medical men have assumed a much greater responsibility than we have ever had before, and we can justify that responsibility only by the hardest of work. If any of you have an idea that the duty of a medical officer in the army is soft, principally consisting of bunk duty, you are mistaken. The hardest work I ever did was during my first two or three months on the border. I went to my cot absolutely exhausted. I had to exercise constant supervision, continually finding fault, in order to accomplish things. But the results, according to Dr. Duhigg's paper, I believe justify our work, and so we feel repaid for it. It is true that in eight months' service we did not lose a man from the Iowa troops on the border from preventable cause. The number of men in the service during the Spanish-American War, as Dr. Duhigg told you, was about the same, about the same number of men responded in 1898 as were called to the border, during which time one regiment was in the service about eighteen months, one regiment in the service about eleven to thirteen months, the other two regiments in the service only three or four months. Now, this time added together makes about an even number of months for the different troops; in other words, the same number of men and the same length of time. We lost 163 men in 1898, we lost 8 men in 1916. I believe that is a record the medical men of the United States can feel proud of. This result has not been entirely due to ourselves, it has in a way, but it has been due principally to the co-operation which we have earned from the line officers. We have given as high as 155 prophylaxes in one day. The number of venereal diseases developing Dr. Duhigg gives as twenty-six, but I believe only nineteen new cases developed; the other cases being recurrence of a chronic condition. Of these

nineteen cases which developed, but nine of them had not taken the prophylaxis that we know of, the other ten men had taken it. How thoroughly they applied the prophylaxis or at what time they took it, we have no way of knowing. In other words, the man can "beat the game" if he wishes—he can register as having had an exposure an hour or two hours previous to registration if he so desires, it may have been thirty-six hours before, we do not know. And the benefit of the prophylaxis is in direct ratio to the time he takes the treatment. So if we take out nine men who we know did not take the prophylaxis, that leaves us ten men who claimed they took the prophylaxis at the proper time. This is a good record. Our twice monthly inspections were not only for the purpose of detecting venereal disease, but for the discovery of lice and to be certain the men were keeping clean. Inspection of the kitchen included everything. The company commander was compelled to furnish the diet list of the meals every time a man came up with sickness. If in a certain company we discovered a larger number of sick that morning than usual, we would go to the kitchen to find the cause if a gastrointestinal disturbance, and we had considerable gastrointestinal disturbance. I agree with Major Duhigg not only that the water contained a little dirt, but that it contained so much dirt that a quart bottle had two inches of dirt in the bottom. The filtering station had given out, but this was only for a short time. The regiment I was with used distilled water for about forty-eight hours. Then we treated the water with hydrochlorite of lime, which is excellent. Inspections were going on continually. We constantly went up and down the company streets finding fault, and I think if a vote had been taken among the men and officers for the most unpopular man in the Third Regiment, the Major-Surgeon would have been about 100 to 1. We regimental surgeons were absolutely the most unpopular people on the border for the first two months, there is no question about it. And the man who was not unpopular was not, I believe, an efficient officer, because a man hates to have fault found with him constantly, and that was our duty. After the first two or three months the men and officers commenced to appreciate our efforts, and then our work was much easier as they could see the benefits which came with proper camp sanitation. We were dealing with men who had been in the habit of living at home with mother to look after them and the doctor there had to be the mother and everything else. But we did develop down there a record for a clean camp—the camp was absolutely beyond reproach; and this was accomplished only by hard work. And in this new crisis which is facing us, any of the men who are expecting to go out and have something soft, resting on a bunk most of the time and practicing surgery the rest of the time, will find that they are mistaken. If not patriotic enough to go into it and do hard work, stay at home. But you should go into it, it is your

duty to do so, and go where you can render the most active and efficient service.

ABSTRACT OF A SPEECH OF HON. ROBERT L. OWEN IN THE SENATE OF THE UNITED STATES, JULY 20, 1917

A bill was before the Senate to increase the rank of the medical officers of the United States Army. The bill was not reached but will probably come up again and should be thought of by the medical profession.

The amendment offered by Senator Owen "Provided, That hereafter the commissioned officers of the Medical Corps of the regular army shall be distributed in the several grades as follows:

	Per Cent.
Major generals.....	0.25
Brigadier generals.....	.25
Colonels	4.00
Lieutenant colonels.....	8.00
Majors	23.5
Captains	32.0
Lieutenants	32.0
	87.50
	100.00

"Provided, That when called into service the numbers of the officers of the Medical Reserve Corps shall be seven to the thousand of men in the National Guard and National Army and the relative grades of the officers of the Medical Reserve Corps shall be the same as the grades of the Regular Army.

"The President shall have authority to appoint officers of either corps as 'consultants,' with the duty of acting in an advisory capacity, making inspections and reports on medical, surgical, or sanitary questions and such other duties as may be required by the chief of the Medical Department.

ARE WE TO FORGET THE LESSONS OF 1898?

"This is a question now being asked by medical men all over this country. We have no desire to recall the sad story of the typhoid fever epidemic among our soldiers in 1898 unless we may profit by doing so. It may be well for us to remember that out of a total of 200,000 enlisted men in that war, more than 20,000 developed this disease. But, says one, vaccination now prevents altogether or greatly lessens the chances of developing typhoid fever, and such an

epidemic can never again occur. This may be true, and is undoubtedly partly true, at least of typhoid fever; but there are other diseases for which, unfortunately, we have no protective vaccination. Some of these diseases are diarrhea, dysentery—both bacillary and amebic—scarlet fever, measles, various forms of meningitis, poliomyelitis, pneumonia, tuberculosis, etc. All infections have not yet been conquered. Among the causes of the fearful diseases of 1898—and the causes were many—was the lack of authority on the part of the medical officer. There is abundant evidence of this in various government documents. In the 'Report on typhoid fever in United States military camps in 1898' the evidence that the superior authority of the line officer was responsible in many instances for the insanitary condition of the camp is abundant. This report tells us that many commands were unwisely located, and often this was done in the face of remonstrances on the part of the medical officer. Medical officers of the Seventh Army Corps generally condemned the location at Miami, and yet regiments were kept on this site until they were much reduced by illness, and at Chickamauga some regiments were placed on ground so rocky that the construction of latrines of proper depth and width was impossible. Other camp sites received the surface washings from adjacent commands. Some were contracted into half the regulation space. Many regiments were compelled to remain on the same site until the soil became badly polluted, notwithstanding the fact there were many broad acres around about, and no hostile army was nearer than Habana. From this report we make the following quotation: 'There were regiments at Chickamauga that did not move a tenth of an inch from the time of arrival in May to that of departure late in August. Requests for change in location made by medical officers were not always granted. As an illustration under this head, we may call attention to the official records of the Fifth Pennsylvania. This command reached Chickamauga Park May 20, and was, unfortunately, located on low ground. Requests for a change in location were repeatedly sent in during June and July. The soil became muddy, the camp received the washings from camps above, the sinks rapidly filled with water and overflowed, and still requests for change in location were not heeded until August 12. As we have seen, some of the regiments were improperly located from a sanitary standpoint. This was done by superior line officers, and sometimes in the face of protests from the medical officers.'

"This report advised that greater authority be given medical officers in all questions relating to the hygiene and sanitation of camps, and now, as we are going into another war, the line has one general officer for every 167 commissioned officers, while the medical corps has but one, whatever the number of commissioned officers may be, and in an army of 1,000,000, the number of commissioned medical officers will be not less than 7,000.

"The medical profession requests that one-half of one per cent. of commissioned officers in its corps have the rank of general officers. This seems a modest request and is allowed in the Navy; but, for some unknown reason, has so far been denied the Army. One who has served in the Medical Corps can understand and thoroughly appreciate the hesitancy with which a lieutenant in that corps may recommend to a colonel of the line that a camp site be changed or that some other sanitary improvement is desirable; and one who served in the Medical Corps in 1898 knows full well the reception such a recommendation frequently met at that time, and he can guess at the reception it is likely to receive in the future under similar conditions. If anyone has doubt concerning the attitude of many line officers of high rank in 1898 toward the recommendations of medical officers, he should read the testimony of Major General Brooke and other officers in command in the camps in 1898. This testimony may be found in the volumes of the congressional inquiry into the 'Conduct of the War Department in the War with Spain,' generally known as the Dodge report.

"The commanding line officer at Chickamauga took no pains in his testimony to show his contempt for the advice of his own medical officers, and this contempt and disregard constituted large factors in filling the hospitals and graves with typhoid cases. We have not place here to quote largely from his testimony, but a few sentences of the testimony of General Brooke may be given:

"Nineteen years have passed since our little war with Spain, and we have crossed the threshold of a great war with Germany, Austria, Bulgaria and Turkey. This war begins with the medical officer possessed of no more authority than he had in 1898. Will his recommendations be as futile as they were then? The medical profession has always been responsive to its country's demands, whether in war, in pestilence, in flood, or in famine. Conscription has never been necessary to fill its quota. Medical officers will do their best and will present their recommenda-

tions to superior line officers, but they realize that these recommendations are likely to receive scant attention, and that the medical officer will be compelled to work under a heavy handicap. The government stamp placed upon the medical officer indicates the opinion that the government has of the value of his services, and that his recommendations will receive from line officers any different consideration from that accorded them in 1898 is not probable. At present the Army Medical Corps has no representation on the general staff or in the war college.

"Will it be possible that camp sites, both small and great, will be selected as they were in 1898, without consultation with the Medical Corps? And are we justified in feeling that we may have some reminders of the experiences of 1898? According to the testimony of the surgeon-general recently, given before a medical committee, the relative number of trained medical officers is not as great now as it was at the beginning of the Spanish War. We had then seven per thousand. We have now about five per thousand.

THE ENGLISH RECOGNIZE THE IMPORTANCE OF GIVING AUTHORITY TO MEDICAL OFFICERS

"In 1904 the English war office was reorganized by a committee, the chairman of which was Lord Esher. In this reorganization no provision was made for a representative of the Medical Army Corps on the general staff, or what corresponds to our war college. At the time the surgeon-general complained of this action. In reply to this complaint Lord Esher's committee stated that while too much importance could not be attached to the sanitary service of the army in peace or in war, the committee could not accept the views of the surgeon-general. Lord Esher's committee continued; 'The army council is not and cannot be a representative body as regards the several arms and departments. The royal army medical corps exists to serve the army in a most important capacity, but the first object must be to create and maintain an army, and this is the function of the army council. To admit the principle of representation would destroy the character of the council.'

"This was the opinion of Lord Esher in 1904. Recently (London Times, Feb. 3, 1917) Lord Esher writes as follows: 'How much of the suffering undergone by our soldiers since the war began has been due to the shortsightedness of my committee, and notably of myself, will never be known. Certainly the control of the adjutant general's branch over the royal army medical corps was and is responsible not only for the

early failure to grip the medical factors of the war, but they hampered conditions under which the surgeon-general has worked. His triumphs and those of the royal army medical corps have been achieved in spite of the obstacles that the subordination of science to ignorance and of elasticity to military discipline explains but can not justify.'

THE RANK AND AUTHORITY OF THE MEDICAL OFFICER

"When Stanton was Secretary of War and Hammond Surgeon-general early in the Civil War, the latter made a request of the former for advanced rank for medical officers. The great Secretary of War replied with a question: 'Will increased rank make your medical men better doctors?' The surgeon-general replied with another question: 'Does increased rank make line officers quartermasters, and those in other corps more proficient?'

"There are two important considerations in regard to the rank and authority of Army medical officers. In the first place, the higher the rank obtainable the better the class of young physicians attracted to the corps. When a young man knows that whatever he may do, however skillful and energetic he may be, whatever discoveries he may make, whatever sacrifices he may undergo, the rank of colonel, with a pay of about \$5,000, is the best that he can possibly look forward to in his old age, it must be acknowledged that the temptation to enter the Army medical service is not great.

"In the second place, and this is of more importance, rank in the Army necessarily means much. A request or a recommendation from a colonel or a general will receive more consideration than when it comes from a lieutenant. Much of the disgrace of 1898 and the disregard shown their recommendations by superior line officers was due to the lack of rank and authority among medical men.

THE BRITISH AND FRENCH MEDICAL SERVICE

"The following is a list of the lieutenant generals and major generals in the British medical service as of October, 1916, taken from the British Army list of October, 1916:

1. "Director general of the British medical service, Sir Alfred Keogh.
2. "Director general of the British forces in France, Sir Alfred Sloggett, rank lieutenant general.
3. "Lieutenant general and director of the British medical service in India, Surgeon-general

O'Donnell, rank lieutenant general.

4. "Director general Indian medical service, Sir Thomas Pardey Lukis, rank lieutenant general.

THE SENIOR RANKS OF THE BRITISH MEDICAL SERVICE

"In the British Army at present there are three surgeon generals with rank of lieutenant general; that is, the director general (Sir Alfred Keogh) at the war office, the director general of British forces in France (Sir Arthur Sloggett), and the director of British medical services in India (Surgeon-general O'Donnell).

"Another officer, Sir Thomas Pardey Lukis, with rank of lieutenant general, is the director general of the Indian medical service.

"There is also a considerable number of surgeon generals with rank of major general. I think the actual number is nineteen, but I have not a recent army list in my possession. These officers all hold important posts, the following are some of the principal appointments:

(a) "Each army on the Western front (we may assume an army to consist of about 200,000 troops) is furnished with a surgeon-general as director of medical services of that army. This officer commands and is responsible for the entire medical service in the army in which he is appointed; he is on the headquarters staff of the army, and is the responsible advisor of the general commanding the army on all questions relating to the care and welfare of the troops, the prevention and dealing with epidemics, arrangements for the collection and evacuation of casualties in sick and wounded, the provision and establishment of field ambulances, casualty clearing stations and hospitals in the army area, the provision of ambulance trains, the establishment of convalescent camps and very numerous other important matters.

(b) "A full colonel, army medical service, is with the headquarters staff of each corps and division, and his duties relate to all sanitary and medical matters in the formation to which he is appointed. He is also the medical advisor of the general commanding the corps or division.

"It would appear very advisable, in fact absolutely necessary, that the above officers hold the senior rank which they at present do.

"An enormous amount of responsibility rests in their hands, and they are daily called upon to give opinion or advice on matters involving very weighty consideration and vital importance not only of vast importance to the well-being and efficiency of the army but also inceptions and schemes involving the expenditure of millions of

pounds, *e. g.*, the defensive measures against gas attacks, and the provision of gas masks and respirators have throughout been carried out by the medical service of the army, this being only one—and a comparatively minor—example of the many questions which have arisen.

"Let us suppose—for the purpose of argument—that these officers did not hold the senior rank which they do at present; would their opinion carry sufficient weight? For example, suppose that the director of medical services of an army held the rank only of colonel every general commanding a division in that army, and also even every brigade commander, would be senior in rank to him. Could it reasonably be expected that the opinion of the director of medical services for the army would then carry the weight and authority which it does at present?

"In my humble opinion there can be only one answer, especially when it is borne in mind that these officers are specially selected for their high rank on account of their abilities and previous experience.

(c) "Other surgeon generals, with rank of major general, are serving in the following appointments:

1. "As director medical services on the lines of communication in France.

2. "As deputy director general at the war office.

3. "As director medical services in Egypt.

4. "As director medical services in Salonica.

5. "As director medical services in Mesopotamia.

6. "As director medical services in three commands in India.

7. "As director medical services in command in England, etc.

"Similar arguments in favor of high rank hold good with regard to all these appointments.

"Lastly, and this is a point which is deserving of sympathetic consideration, surely it is advisable to provide a certain number of higher ranks in the medical service, as in other branches of the army.

"The provision of these higher ranks and appointments which would be filled absolutely by selection, would furnish a goal for laudable ambition and an incentive to strenuous scientific work throughout the whole of an officer's service, and can, in my opinion, be productive of nothing but the very best results.

"The present campaign has furnished innumerable instances of the vast importance of the medical service and of the high standing and authority which it holds with the rest of the army.

"The French Army also dignified the medical department by providing for officers of the rank of major general and lieutenant general. This is also true of the Italian, Austrian, German and Japanese Armies for the same reasons.

"On January 16, 1917, Secretary of War Hon. Newton D. Baker strenuously urged upon Congress legislation to give the Army equalization of rank in the higher grades with that of the Navy on the ground that otherwise the detrimental effect on the Army would be too clear to require more than a statement. He said:

"I wish to strongly emphasize that without legislation giving the Army equalization of rank in the higher grades with that of the Navy, the branch of the government of which I am in charge will be done an obvious injustice, the detrimental effect of which to the Army is too clear to require more than a statement. All the reasons which have been urged for the creation of these grades in the Navy so as to efficiently handle the units properly composing a command to be under the direction of such officers of the Navy are present in at least an equal degree in the Army. As Congress, after a full consideration of the subject, wisely decided on the advisability of giving the Navy these grades in order that it may be properly and efficiently officered, for similar reasons it should now provide similar grades for the Army.

"The embarrassment which arises in every branch of the service when brought in contact with other officers of foreign service of superior grade but not existing in our service is identical.

"But the constant embarrassment arising between the two services in the disparity of rank is too apparent to call for more than mention.

"If in all those joint matters in which the Army and the Navy are concerned the Navy, by reason of the position of the superior grade is entitled to outrank the Army, the Army must perforce regard itself and be looked upon as a subordinate branch, and this is too inequitable."

"This argument of the Secretary of War applies with precisely the same force to the organization of the Medical Department, which should not be put in the attitude of being subordinate in the field for which it is responsible. It should have a commanding position of dignity and responsibility, and when the recommendation is overruled it should be overruled by an officer of equal rank in the line for military purposes only, and then that officer should be personally responsible for the consequences, and if he errs should be subject to immediate court-martial."

THE AMERICAN REVIEW OF TUBERCULOSIS

Within nine months the American Review of Tuberculosis has made for itself a unique place in medical circles throughout the United States and in almost all parts of the world. Few specialized journals have received a more cordial welcome than this one has, as evidenced by its rapidly increasing subscription list. The large number of medical men who are interested in the treatment and prevention of tuberculosis gives the Review an unusually extensive field.

The Review aims to be not only a clearing house for the best American thought and production in relation to the clinical, pathological and sociological phases of tuberculosis, but it aims at the same time to stimulate renewed interest on the part of those who are already working in this field and to arouse interest on the part of the general practitioners to whom tuberculosis does not make a very ready appeal. It is not a propaganda journal but it does frankly aim to be educational, as every good medical journal should do.

Its editorial staff headed by so well-known an authority as Dr. Edward R. Baldwin of Saranac Lake, for so long an associate of Dr. Trudeau, and containing the names of men of such national and international prominence as Dr. Lawrason Brown, Saranac Lake, N. Y.; Dr. H. R. M. Landis, Philadelphia, Pa.; Dr. Paul Lewis, Philadelphia, Pa.; Dr. M. J. Rosenau, Boston, Mass.; Dr. Henry Sewall, Denver, Colo.; Dr. B. S. Veeder, St. Louis, Mo., and Dr. Allen K. Krause, Baltimore, Md., assures those who subscribe to this publication an unusually high grade of material. The further fact that the journal is published by the National Association for the Study and Prevention of Tuberculosis vouches for its standing and gives added assurance to its future.

The backing of the National Association for the Study and Prevention of Tuberculosis also makes it possible for the publishers to furnish the Review at so moderate a price as \$3.00 which, to those who know anything about the cost of production of such publications, will readily appear as less than the cost of production. We are glad to recommend the American Review of Tuberculosis to our readers and urge them to add it to their subscription lists. Subscriptions should be sent to the New York office at 105 E. Twenty-second street, New York City.

Dr. John H. Hamilton of Albany, New York, has been appointed epidemiologist and instructor in Preventive Medicine and Hygiene in the Department of Pathology and Bacteriology at the University of Iowa.

This is the position which was made vacant by the resignation of Dr. M. F. Boyd who recently went to Texas. Dr. Hamilton has for the past few years been connected with the New York State Department of Health.

The Journal of the
Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa
T. B. THROCKMORTON, Business Manager.....Des Moines, Iowa

Publication Committee

T. B. THROCKMORTON, Secretary.....Des Moines, Iowa
W. L. BIERRING.....Des Moines, Iowa
F. W. PORTERFIELD.....Waterloo, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa
D. H. BOWEN.....Waukon, Iowa
T. E. POWERS.....Clarinda, Iowa

SUBSCRIPTION \$2.00 PER YEAR

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII March 15, 1918 No. 3

THE STATE MEDICAL SOCIETY AS A BUSINESS ORGANIZATION

The older conception that state and national medical societies were purely scientific bodies, is gradually giving place to the idea that these representative organizations have distinctive business and economic functions. (We refer to societies governed by delegates.) Almost daily we are confronted with problems which are difficult for the individual practitioner of medicine to solve. The business man and the attorney find that most of their problems touch at some point more or less intimately with the general problems of the business world. This is true but in a different way with the physician. It will be many years before the traditions of the past can be overcome and the physician be regarded as other men are. From almost the beginning of civilization, the doctor has held a peculiar position in the world's affairs. He has been looked upon as the devoted agent of others; his time, energies, and sacrifices should be unselfishly given to the rest of mankind, and when relief from suffering and distress has been effected, and danger has been averted, he should receive the smallest compensation and be forgotten until misfortune again comes. If he demands more, his right is challenged on the score of devotion to an ideal which seems to apply to him and no one else. It is not surprising this should be so when we consider the ignorance and superstition that still surrounds disease and its relation to the human body, and the multitude of ignorant

quacks which present their claims to the public as practitioners of medicine. Almost daily the individual physician of the educated class is confronted with insulting claims for a reduction of fees, claims for damages, and many forms of service of a private nature for which some one else derives the benefit. This is not expected of business men or lawyers, and lawyers are not subject to the risk of malpractice claims, which are generally of the nature of blackmail. If commissions are formed, doctors are generally ignored or given a subordinate place unless the nature of the commission absolutely demands the technical knowledge of a physician, and even then consciously or unconsciously he is ignored as far as possible. It is not the disposition of the layman to place the doctor in this position but rather the willingness on the part of the physician to accept it. If there is a remedy, it is in a closer organization and the employment of agents to direct the interests of the profession. We have adopted resolutions and appointed committees at various times to report. We have as a matter of fact a good organization, and if we cooperate efficiently, we shall grow into recognition and influence.

We have had in mind a tentative plan which we believe would improve our business relations and perhaps lead to a better understanding with the public. It would not involve a reorganization but a better coordination of our activities. We have thought if the Board of Trustees would invite a conference with the various standing committees to go over the whole plan of work and consider in detail the several questions involved; the income of the Society, a budget of expenses, a productive fund to be laid aside as a permanent investment; to consider the work of the secretary, the editor, medical defense, public health and legislation, and the counselors. Under our present plan, we vote money as long as we have any, without much consideration as to how effectively the money is used or whether it is fairly distributed. Sentiment sometimes takes the place of good business policy.

The great body of the profession are busy with their own private business affairs, and so far as the State Society is concerned, interested in the scientific and professional activities and such general matters as will serve to make professional life as comfortable and safe as possible. The profession is willing to make reasonable contributions for this purpose, provided the money is properly expended. It should be understood that certain of the agents must give a considerable part of their time to the work of the Society to

secure the best results for the general welfare of the Society and should receive adequate compensation. The Board of Trustees from their knowledge of the affairs of the Society, are the best qualified to formulate some plan of cooperation with the advice and assistance of the several committees, and submit a well worked out scheme to the House of Delegates for their consideration as the legislative body of the Society.

EXAMINATION OF SELECTED MEN FOR MILITARY SERVICE

If it were not for the seriousness of the situation, the experiences of the medical members of the exemption boards would be humorous in the extreme; the daily changes in the instructions touching exemptions, qualifying and disqualifying for service on physical grounds, constantly reminding one of Dickens' description of the British Circumlocution Office. In extenuation of the apparent uncertainty of the best course to be followed, is our inexperience in war matters, and the roundabout way we have in getting at things. It is the government's purpose, no doubt, to do a disagreeable thing in the least disagreeable way and to offend as few people as possible, and to disturb the private affairs of people as little as possible. Agriculture is likely to suffer if the farmer is taken; transportation embarrassed if railroad men are taken. Almost every industry is doing something for the government. Private business is preparing food and clothing for the people, toy and candy makers in necessary and indispensable service to the country. The degree of dependency in a heretofore supposedly rich country, is at this present moment most alarming. We can easily imagine that dependency and industrial boards are exercising their mental faculties to the utmost degree to discover some means to furnish a great number of soldiers and at the same time exempt almost everybody. These boards seem to get fairly started in solving the question when some new rule is promulgated. The medical member of the board, as is the custom in this country, becomes the target of criticism. We have seen in the newspapers that men are sent to the cantonments with glass eyes—at least one to the man—men with wooden leg or legs; and other not less disqualifying physical conditions. We have not been able to discover any such instances. However, we would not intentionally deprive the newspapers of the comfort of saying things about the poor obscure doctor who is serving his country in this small way. If the boards are to furnish the country

with soldiers and at the same time exempt everybody for agricultural, industrial, and dependency reasons, how can they do better? We venture the statement that if men with one eye or one leg were sent forward, they were not examined but merely sent to fill a quota. To make the alleged shortcomings of the doctor more apparent, officers were sent out to inspect the boards, and now the doctor on the board is deprived of the right of having an opinion on a case unless a man has lost both legs or both arms. If the man has one leg or one arm he must be sent to an advisory board. If a man has a heart disease of such a nature that he will need in the very near future an undertaker, the doctor on the board may pass on his case, otherwise the man shall be sent to the doctors of the advisory board. It will thus be seen how completely the country is protected against the ignorance and incompetency of doctors on the local boards.

There had once been a theory that a local exemption board by careful study and with a loyal regard for the instructions sent out by the government, would be able to select and examine candidates for military service, and to supplement both selection and examination by a reference in appealed cases to a district and advisory board for the purpose of coordination and expert opinion.

It is not our purpose to criticize, for the main purpose was wise and has accomplished most excellent results, but is there not some danger? We have in mind at least one local board doctor who felt great humiliation at the reflections cast by the new orders and was only comforted by reflecting on the experiences of Mr. Meagles with the British Circumlocution Office. "*How not to do it*" is, we believe, not the purpose of the Provost Marshal General, but to secure quotas of men in the most expeditious manner consistent with efficiency, but to send to any considerable distance more than one-half of the men for examination, will be an unnecessary hardship and a serious reflection on the hard working medical member of the local board. There are, no doubt, certain borderline cases and certain cases of dissatisfaction on the part of the selected men which should go to a board of experts supplied with facilities for expert examination with sufficient leisure to make team-work examinations of high character, quite different from that contemplated in the new rules.

If there are a few or if there are many local board examiners who are incompetent or dishonest, they should be changed and not do an injustice to the great majority of capable and efficient

doctors. Such an impeachment of their honor is felt more acutely than anything that could happen to them.

Since the above was written a manual of instructions has been published which meets most of the above apparent criticism.

The New York Medical Journal has taken a deep interest in the United States troops stationed at Camp Mills preparatory to transportation to France for active service, particularly the Rainbow Division. It will be remembered that one Iowa regiment is in this division (168th) under the medical command of Major W. S. Conkling of Des Moines and Lieut. Col. D. S. Fairchild, Jr., of Clinton, chief sanitary inspector of the division. The New York Medical Journal says:

Twenty-seven thousand troops from twenty-seven different states of the union passed in review before General Mann, commander of the Forty-second Division of the United States Army, on Hempstead Plains on October 7. This is the largest body of American troops that has been assembled under arms since the days of the Civil War. This one division contains two thousand more men than there were in the entire army of the United States in 1897. These men marched in review with the steadiness and precision of veterans. The assembling of the constituent forces was done without the slightest confusion or delay, giving evidence of the good results which have followed the training of the divisions at Camp Mills. The men were in the pink of physical condition, clear eyed, brown of face, alert, and showing that perfect health without which an army is useless. With all this force, there was but one regular army surgeon, the division surgeon, but so well organized was the medical department that with the aid of the national guard surgeons, the sick list was reduced to an almost negligible figure.

When we consider the appalling devastations of typhoid fever, small-pox, and other contagious diseases wherever fresh levies of troops have been congregated in previous wars, we realize how much the army owes to medicine. A hundred years ago one-half of this command might have been on the sick list from small-pox. Twenty-five years ago, probably 25 per cent. of these men would have suffered from typhoid fever, while measles and other contagious diseases would have reduced the total effective force another 10 or 20 per cent. With vaccination against small-pox, with prophylactic injections against typhoid fever, with segregation and ventilation as measures against measles and similar contagious diseases, it was possible to gather these men from every section of the United States, subject them to a complete change of diet and environment and to rigorous physical training, and still keep the sick list at a figure far below that which obtains in the average urban population under normal conditions.

The review of the Rainbow Division was not only a testimonial to its efficient military organization,

but showed that in its medical aspects the organization of the army has more than kept pace with the improvements in military science. The liberal attitude of Congress toward the medical department is amply justified in the results shown in the mobilization of this first draft of the national guard regiments, which is so soon to carry our flag to France.

February 28, 1918.

Dear Doctor Fairchild:

The address of Dr. Horace D. Arnold, Major, Medical Reserve Corps, now on duty in the Surgeon General's office, on "Some Problems of Education Resulting from the War," dominated the interest and discussions of the two day's session of the Annual Conference on Medical Education and Licensure, in Chicago February 4 and 5. While expressing to a large extent, his personal views, yet appearing as the representative of the Surgeon General, the official significance of his suggestions could not be overlooked. The prominent feature of the address was the urgent need of speeding up medical students as a war measure, by holding continuous sessions at medical schools. In accordance with the present suggestions the year is to be divided into three periods, beginning October 1, February 1, and July 1, with one week's vacation at the end of each period. In order to permit schools ample time to prepare for the proposed arrangements, it is not to begin before the coming October first. Students entering this year will save one year in their course of medicine, while the members of the present freshman, sophomore, and junior classes will save nine, six, and three months, respectively. Although the discussion developed a marked diversity of opinion in regard to the practicability of the plan, it was generally recognized that, in as much as medical students are enlisted in the Medical Reserve Corps, there seems no reason why they should have longer summer vacations any more than the men in service at the front. A number of licensing boards saw a difficulty in the plan, because a certain statutes and requirements for attending in four calendar years, but they too recognized the matter as a war measure and felt that the necessary changes could be made.

After graduation the medical student is permitted, and in fact required to serve one year on an approved hospital before he is called to active duty. Another interesting feature brought out by the discussion is the fact that both medical schools and hospital are brought under Federal supervision and control. If a medical student fails to keep up in his studies and it appears that he will not make a good medical officer, he is ordered into service. Again if the medical school does

not fulfill the requirements of the Surgeon General's office, the medical students are promptly taken into general service. A similar check is maintained over the hospitals in which the interne service is carried. The address mentioned above distinctly outlined the kind of service in the hospital that is acceptable and unless that is fulfilled, the hospital must give up the internes for regular service.

While the proposed plan is temporarily regarded as a war measure, it is readily seen that its future influence on medical education and standardization of hospitals, is far reaching in importance.

WALTER L. BIERRING.

CANCER OF THE RECTUM AND COLON IN LIFE INSURANCE EXAMINATIONS

Dr. Alfred J. Zobel of San Francisco in the Proctologist and Gastroenterologist for December, 1916, calls attention to the neglect of insurance companies and medical examiners in directing particular attention to examinations of the rectum and colon for diseases which are known to locate in this region, which are dangerous to life, and cites a number of cases of this kind which have come under his observation. In the discussion which followed the reading of this paper, other observers presented similar observations. Several instances were cited in which tuberculosis and malignant and other diseases were overlooked by the examiner and policies were paid in a comparatively short time after the acceptance of the risk. Other cases were reported where death followed in a few months after the appearance of the first symptoms. This, we believe, is a rather common occurrence, giving an abundant opportunity for an insurance policy to be taken out before any general symptoms appeared and during a time when a risk might honestly say that he had never noticed any trouble with his intestines, or rectum, and when a careful physical examination would have revealed evidence of disease.

We have examined Dr. Frederick L. Hoffman's statistics on this point and find that the mortality from cancer of the peritoneum, intestines and rectum in registrative area in the United States from 1908 to 1912 was 7.7 per 100,000 deaths; in England and Wales for the same period, 17.5 deaths from cancer of the peritoneum, intestines and rectum per 100,000; in New York City, 10.3 per 100,000 deaths, and in London 21.4 per 100,000 deaths. Turning to the statistics for the Prudential Industrial, we

find cancer of the stomach and liver 1.86 per cent. of all cases; 1.86 males, females 2.58; and the peritoneum, intestines and rectum, .42 per cent. males, .81 females; the peritoneum, intestines and rectum giving the second largest mortality of local cancer. Attention to examinations for cancer in life insurance would seem important for it is a well recognized fact that localized cancer may exist for some time before it is noticed even by the most truthful patient.

The following letter has been sent me by Dr. C. M. Porter, of Colfax. Doctor Yelt was a man whose work was entitled to consideration, but whose retiring disposition prevented his getting the credit that his work entitled him to. Dr. Yelt was for a time associated with Dr. Porter, and volunteered in the French service during the first months of the war. Dr. Porter who knew and appreciated the merits of Dr. Yelt, writes as follows:

The subject of this communication is afforded by the enclosed letter addressed to me from Touloune, France, and pertains to the death of a former associate of mine who volunteered in the French service during the first months of the present war.

Doctor Yelt was a gentleman and physician of extraordinary character and qualifications. He was a graduate of the University of Helsingfors, Finland, and had been a student under Rolier of Switzerland. He was especially well qualified as a technical laboratory research and diagnostic worker. During the year 1915 the American Medical Journal offered a prize for the best essay of a limited number of words dealing with the subject of Tuberculosis. Doctor Yelt entered this competition and was awarded second position with the explanation that his thesis did not deal liberally enough with his personal observations and conclusions. The fact is that Doctor Yelt avoided injecting his article with the personal pronoun of the first person because as he interpreted the subject given him, he was to write purely of the scientific phases of the subject. As to personal observations he of course with Rolier and others could have more than qualified against the ruling of the committee of judges on this particular defect.

Touloune, January 31, 1918.
Seventh Street, Demouilles.

Monsieur:

I am writing to tell you that my husband, Dr. Otto Yelt is dead. He was active until the last and working among his patients. His death was caused by congestion of the brain.

It was Dr. Yelt's request that his wife write you. His request was that you publish his death and communicate with Colfax friends. He died on January 4. and was Chief of Service a la Psychotherapeutics, Hospital 58 in Touloune. He was doing his duty and

consecrating his time and life to his work for the victims of the war. He died in service for France and humanity. He was glad when America joined the Allies and was proud of his adopted country.

I want to thank you in advance for the trouble I am giving you in doing this for me. I pray you will accept my best sentiments.

RITA YELT.

THE OWEN-DYER BILL FOR INCREASED RANK

Last week we printed the text of a bill just introduced simultaneously in the Senate by Senator Owen and in the House by Representative Dyer. The numbers are, respectively, S. 3748 and H. R. 9563. These bills consist of two paragraphs. The first reads:

"That hereafter the commissioned officers of the Medical Corps, and of the Medical Reserve Corps, of the United States Army on active duty shall be distributed in the several grades in the same ratios heretofore established by law in the Medical Corps of the United States Navy."

The bill is essentially the same as that introduced by Senator Owen last July. The latter—the Owen bill of July—provided definite percentages which should be applied to the distribution of the various grades in the Army. These were the same as apply to the Navy. The Owen-Dyer bill provides that the officers of the Medical Corps and of the Medical Reserve Corps of the Army on active duty shall be distributed in grades in the same percentages as established for the Navy; the end-results are the same. The wording of the present bill is undoubtedly more diplomatic, since it presents to senators and congressmen a simple request to grant to one branch of the service the same ranks as prevail in another branch of the service which performs essentially the same duties and fulfils the same requirements.

The following table shows the percentage distribution in the various grades of the regular Army and Navy Medical Corps as at present constituted:

	Army Present Law Per Cent.
Lieutenants
Captains	67.2
Majors	23.7
Lieutenant-Colonels	5.42
Colonels	3.16
Brigadier-Generals	None ¹
	Navy Present Law Per Cent.
Lieutenant Junior Grade.....
Lieutenant	64.
Lieutenant-Commander	23.5
Medical Inspector (Comm.).....	8.
Medical Director (Captain).....	8.
Medical Director (Rear Admiral).....	0.5

1. Surgeon-General Gorgas is a Major-General by special act of Congress. Ordinarily the Surgeon-General is Brigadier-General.

It must be borne in mind in considering the above table in its relation to the proposed legislation that the distribution given in the table applies, so far as the Army is concerned, only to the regular Medical Corps; it does not apply to the Medical Reserve Corps. The Medical Reserve Corps, as constituted by the National Defense Act, is limited in rank to the three grades of lieutenant, captain and major, with no percentage limitations.

The Owen-Dyer bill provides, first, higher grades and an increased percentage of officers in the higher grades. Second, and this is important, the bill provides that an officer in the Medical Reserve Corps on active duty may achieve the same rank as an officer in the regular Medical Corps. If the bill becomes a law, including both the regular Corps and Medical Reserve Corps, and basing the percentage estimate on 20,000 officers in active service (required for an army of 2,750,000 men), there may be 100 brigadier-generals, 800 colonels, 1,600 lieutenant-colonels, 4,700 majors, and 12,800 captains and lieutenants.

Both the Owen bill of last July and the present Owen-Dyer bill provide for the appointment of "consultants." The paragraph in the former reads:

"The President shall have authority to appoint officers of either corps as 'consultants,' with the duty of acting in an advisory capacity, making inspections and reports on medical, surgical, or sanitary questions, and such other duties as may be required by the chief of the Medical Department."

The following is the paragraph in the new Owen-Dyer bill:

"The Surgeon-General shall have authority to designate as 'consultants' officers of either corps and retire them as the interests of the service may require."

It will be noted that the first bill assigned to the President the authority to appoint these consultants, and defined their duties. The Owen-Dyer bill gives the Surgeon-General the right of appointment, but it does not specify what the duties of these consultants shall be.

The Owen-Dyer bill will, we are sure, have the approval of every physician, whether he be in the Medical Corps, in the Medical Reserve Corps, or a private in the ranks of the general profession. It is not only a bill that we can heartily endorse, but, also one that we should feel it a duty to support. But those who write to their congressmen or senators should inform them that the increased rank, and the authority which goes with it, is desired not for the increased pay which will come with the advanced rank, nor as a salve to the pride of these officers, but primarily in the interest of sanitary and health conditions of our army and as common justice to men who are making tremendous sacrifices. Nevertheless, whatever may be the verdict of Congress in this matter, medical men will play the game and do their duty; but Congress should be given to understand that these men at the present

time are working under a heavy handicap which a wise Congress will remove without delay.—Editorial, *Journal A. M. A.*, February 23, 1918.

MOBILIZING THE PROFESSION FOR WAR

Until the entire medical profession of the United States, or at least those who are mentally and physically fit and within the age limit, are mobilized within the Medical Reserve Corps of the United States Army, not until then can we give to the Surgeon General that efficiency which he so badly needs in having a large body of medical officers upon whom to draw.

You may never be called, at the same time your joining the Medical Reserve Corps and placing your services at the command of your country, clearly indicates the patriotism which the medical profession, as a whole, should evince and which we must manifest if we are to win the war.

Every doctor must realize that success depends upon a carefully selected and thoroughly trained body of medical officers. By careful selection, we mean the placing of a medical officer in a position where he is best fitted for the service, and only by having an immense corps or the entire profession mobilized upon a war basis, can we serve our country to the best possible advantage.

This mobilization of the entire profession should come from within the body itself, but every physician coming within the requirements of the service, as to age and physical fitness, should seriously consider this suggestion and not wait for complete mobilization but apply at once for a commission in the Medical Reserve Corps of the United States Army.

It is not only for the combatant forces that medical officers are required but for sanitation, hospital camps, cantonments and in other departments where the health and life of the forces are dependent upon the medical officer.

We have within the profession a sufficient number of doctors to fully meet the requirements of the Surgeon General's office whatever they might be, but to be of service, you must join the Medical Reserve Corps to enable you to meet the appeal which is now being made for a large and efficient Medical Reserve Corps upon which the Surgeon General may draw as requirements demand.

THEODORE C. JANEWAY, Ph.D., M.D.

Major Theodore C. Janeway, Ph.B., M.D., died at his home in Baltimore, December 27, 1917, from pneumonia. Major Janeway was born in New York, November 2, 1872, the son of the distinguished New York physician, Edward C. Janeway, so well known and admired by physicians of a generation ago, who studied in New York. Major Janeway was graduated from Yale College in 1893 with degree of bachelor of philosophy; received his medical degree from the College of Physicians and Surgeons in

1893. He was instructor and lecturer at the Medical School of the New York University for several years. Later he became associate professor and in 1909 professor of medicine in the Medical School, Columbia University. In April, 1914, he was elected to the chair of medicine at Johns Hopkins University, succeeding Sir William Osler and Dr. Lewellys F. Barker. Dr. Janeway gave much of his time and energies to research work and was identified with Russell Sage, Pathological Institute, and one of the scientific directors of the Rockefeller Institute for Medical Research. Dr. Janeway made many valuable contributions to medical literature, particularly to cardiovascular disease. Early in the war he joined the Medical Reserve Corps, and was placed in charge of the section on cardiovascular diseases of the Division of Internal Medicine at the surgeon general's office. Major Janeway was a member of a number of important medical associations and was closely affiliated with clinical work in Presbyterian Hospital, New York, and with Johns Hopkins University Hospital, Baltimore.

ADOLF VON BAEYER

Professor Adolf von Baeyer, whose death in Munich was announced recently, was prominent among the founders of Germany's chemical industry. His early studies were devoted to the constitution of complex molecules, and much of our knowledge of the architecture of organic compounds is due to his brilliant investigations. His work, though at first of a purely scientific character, soon found industrial application, and a trade in synthetics was set up. His greatest achievement, perhaps, was the preparation of synthetic indigo with naphthalene in one case and benzene in another as a starting point. The process, after the expenditure of very large sums of money, was acquired by the Badische Anilin und Soda Fabrik at Ludwigshafen, which is quite distinct from the Farbenfabriken of F. Bayer and Co. at Elberfeld—also a very large concern. Adolf von Baeyer was born in Berlin, in 1835, and was a pupil of Bunsen and Kekule. In 1860 he became assistant professor in Berlin at the technical college, then from 1872-1875 in Strassburg, and lastly the head of the university laboratory at Munich, the famous Liebig's chair.

REGULATIONS GOVERNING ENLISTMENT OF MEDICAL STUDENTS AND HOSPITAL INTERNS

Medical Students

Medical students should enlist in the Medical Enlisted Reserve Corps before the time expires for filing their questionnaires with the local boards. For the purpose of expediting this matter, authority has been granted to recruiting officers of the army to accept properly accredited medical students from

well recognized schools and to enlist them in the Medical Enlisted Reserve Corps. The surgeon-general's office has notified the deans of medical colleges that it would facilitate matters if a supply of enlistment papers were obtained from the nearest recruiting station. Physical examination of students may be made by any medical officer of the army, and if satisfactory, the student would then present himself with his application, the dean's affidavit and the report of his physical examination, to the nearest recruiting officer, who will enlist him. If the physical examination is not satisfactory, all the papers should be sent at once to the surgeon-general for the consideration of the waiving of minor physical impairments.

Necessary Papers

The application should be a written application for enlistment in the Medical Enlisted Reserve Corps, addressed to the surgeon-general. It should give the student's full name and address, the name of the medical school and the class of which he is a member, the address and number of his local board and his "order number" in the draft. It should be accompanied by an affidavit from the dean or his authorized agent, which must be duly executed before a notary. This should state that the student is a bona fide student in the school, and must specifically mention the class of which he is a member for the session of 1917-1918.

Procedure

After enlistment in the Medical Enlisted Reserve Corps, the student may fill out the questionnaire when it reaches him, placing a cross in column "A" opposite "D" in Class V. on the first page, and specifically claim deferred classification by answering the question at the bottom of the first page. He will then complete the required parts of the questionnaire, especially paying attention to Series VI, military or naval service. Members of the Medical Enlisted Reserve Corps are entitled to place in Class V. The effect of such classification is to grant exemption or discharge from the draft.—(The Journal of the American Medical Association.)

THE MEDICAL BULLETIN

The first number of a new publication entitled The Medical Bulletin, to be a review of war medicine, surgery and hygiene, published by the American Red Cross Society in France, has just appeared. It is dated November, 1917, and opens with the announcement of the appointment of a research committee of the American Red Cross in Europe. This committee consists of Capt. Walter B. Cannon, chairman; Capt. Kenneth Taylor, secretary; Majors Joseph A. Blake, G. W. Crile, H. Cushing, H. T. Nichols, Richard P. Strong, and Alexander Lambert, Col. M. W. Ireland, and Drs. James A. Miller, Homer Swift and William C. White. The address of the secretary of the research committee is 6, Rue

Piccini, Paris, XVI. A central laboratory in Paris has been established at the Red Cross Military Hospital at the same address, which will cooperate with the present laboratory there established under the Robert Walton Goelet Research Fund.

In order to provide for meetings, a research society has been founded to meet once a month in Paris, and the Medical Bulletin has been established to review medical literature. The Bulletin will contain abstracts of papers read at the monthly meetings of the society and also of articles appearing in English, French and American medical journals. A library of current medical journals has also been established at the office of The Bulletin. The publication will be issued monthly, and will be available for the physicians and surgeons with the American Army in France, and for those of our allies who may find it helpful. It will be furnished without charge to the officers mentioned.

The matter appearing in The Bulletin, is classified under surgical, medical, radiologic, bacteriologic, nervous and mental, and skin and genito-urinary. It contains a translation of the conclusions adopted by the Inter-Allied Surgical Conference held in Paris in April, 1917, fourteen surgical abstracts, one radiologic, two medical, one bacteriologic, two nervous and mental and two skin and genito-urinary abstracts. Of these abstracts, two are from the Journal, eight from the British Medical Journal, three from the Lancet, one from the Archives of Radiology, three from the British Journal of Surgery and five from the Archives de medecine et de pharmacie militaires.—(The Journal of the American Medical Association.)

THE RESPONSE OF THE MEDICAL PROFESSION—AN IMPRESSION

Heretofore, in America, interest has centered in impressions gained in the war areas of Europe. Of even greater interest just now is an impression of the twilight of war in America. Since sailing from the states, there has run through my mind an impression—a strong impression gained during my very pleasant duty there.

It was the remarkably creditable response of the medical profession. Everywhere the professional man was earnest, grave, patriotic—ready for any sacrifice required in the performance of his duty. What an honor to the corps that the medical men were first in the field; the first wounded; the first killed in the field; the first to make up its full quota; the corps with the largest reserve, and the most completely organized corps of the army.

What a tribute to the regular Army Medical Corps and the civilian Medical Corps that, despite the many differing points of view, complete harmony existed from the beginning up to the present. All this reflects honor on every physician, whether civilian or regular army officer.—(Journal of the American Medical Association.)

G. W. Crile, Major, M.R.C., U. S. Army.

BASE HOSPITAL NO. 13

The Presbyterian Hospital Unit, Chicago, under the command of Lieut.-Col. Chander Robbins, M.C., U. S. Army, and directed by Major Dean Lewis, has been ordered to mobilize and is awaiting orders for departure.

AMERICAN ARMY SURGEONS TO SERVE IN RUMANIA

The Secretary of War has authorized and the surgeon-general of the Army has organized a body of one hundred army surgeons for service in the hospitals of Rumania. The Department of State has notified the Rumania Government that this has been done. This detachment is under Colonel Walter D. McCaw of the regular army, who will report to the American Minister at Jassy, Rumania.—(New York Medical Journal.)

NOTICE

We have been endeavoring to secure a complete file of medical journals published in Iowa, and we are also collecting a file of reprints of Iowa doctors to be turned over finally to the Medical Department of the State Library. We have all of the Iowa Medical Journal except Volumes 3-4-5 and 6, or for the years 1897-1898-1899 and 1900. If any of our readers have these volumes, we would be glad to have them inform us of the fact, and on what terms they would be willing to dispose of them. EDITOR.

THE MAYO TRAIL

The Burlington Trail which is to be known as the Mayo Trail—in honor of the Rochester surgeons—is to have expended \$300,000 in improvements. The trail leads from Iowa to Minneapolis, through Fillmore, Goodhue, Olmstead and Dakota counties.

THE FOOD POSITION IN GERMANY

According to the British Medical Journal, some additional and more precise details with regard to rations of bread and potatoes in Germany can be given. The imperial bread ration in Germany is 2000 grams a week, that is to say, 285 grams a day. The amount actually allowed varies locally. In Berlin it is 1950 grams a week; in Essen 2000 grams a week. Bread grain is milled up to 94 per cent. The imperial potato ration is 3,500 grams a week, or 500 grams a day. The amount actually allowed varies locally, but is, generally speaking, about the same as the imperial ration.

IOWA MEDICAL MEN IN THE WAR

To Ann Arbor, Mich., Psychopathic Hospital, for intensive training, Lieut. Love E. Pennington, Cherokee.

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Lieut. Millard F. Smith, Little Rock.

To Chicago, Ill., for instruction in orthopedic surgery, Lieut. Ray R. Kulp, Davenport.

To Cleveland, Ohio, for instruction, and on completion to Camp Sherman for duty, from Fort Riley, Capt. Benjamin G. Dyer, Ames.

To Dallas, Texas, State Fair Grounds, Lieut. James T. McBride, Des Moines.

To Fort McPherson, Ga., for duty, from Camp MacArthur, Capt. Ben S. Walker, Corydon.

To Fort Omaha, Neb., U. S. Army Balloon School, for duty, Lieuts. Joseph W. Tyrell, Des Moines; George A. Bemis, Garner.

To Fort Riley, for instruction, Lieut. William F. Carver, Fort Dodge.

To Fort Snelling, Minn., for duty, Lieut. Elmer A. Bare, Pleasantville.

To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Bowie, Lieut. William Frank Brown, Keokuk.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to Camp Meade, Lieut. Robert G. Hinrichs, Palmer.

To their homes and honorably discharged, Lieut. Edwin C. Rogers, Wapello; on account of physical disability which existed prior to their entrance into the service, Lieuts. John F. Schwertley, Earlring; William W. Weber, Hartford; Joseph C. Barragy, Mason City.

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. John E. Kiley, Valley Junction.

To Camp Stuart, Newport News, Va., to examine the command in nervous and medical disease, from Philadelphia, Capt. Samuel C. Lindsay, Independence.

To Fort Oglethorpe, for instruction, from Camp Custer, Lieuts. Harry R. Jenkinson, Iowa City; Henry L. McPherrin, Perry.

To Fort Riley, for instruction, Lieuts. Laurell L. Lugar, Corydon; Julius L. Shryer, Durant; Lawrence L. Craven, East Peru; Lee W. Prescott, Sloan; Harry F. Rubel, Struble.

To San Antonio, Texas, Kelly Field, Aviation Section, Signal Corps, for duty, Lieut. Arthur E. Shappell, Des Moines.

To his home and honorably discharged, Capt. Andrew J. Swezey, Decorah.

To Camp Dodge, Des Moines, Iowa, for duty, Lieut. Floyd H. Weidlein, Wellman.

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Capt. James J. Daly, Decorah.

To Camp Jackson, Columbia, S. C., as divisional psychiatrist, from Camp Doniphan, Capt. Thomas J. Heldt, Cedar Falls.

To Camp Wheeler, Macon, Ga., for duty, from Camp Dix, Lieut. John D. Hexom, Decorah.

To Fort McHenry, Md., for duty, from Fort Riley, Major Charles E. Ruth, Des Moines.

To Fort Moultrie, S. C., for temporary duty, from

Fort Moultrie, Lieut. Arthur C. Strong, Burlington.

To Fort Oglethorpe for instruction, Lieuts. Walter E. Foley, Davenport; Roswell H. Payne, Des Moines.

To Fort Riley for instruction, Capts. Hugh Mul-larky, Manson; Dyre H. Pelletier, New Hartford.

To Aberdeen, Md., for duty, from Fort Oglethorpe, Lieut. Milton J. Freeman, Carroll.

To Boston, Mass., for instruction, and on completion to his proper station, from Camp Upton, Lieut. Leo. A. Goodman, Dubuque.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. George W. Frank, Sunbury.

To Camp MacArthur, Waco, Texas, for duty, Capt. Ben S. Walker, Corydon.

To Chicago, Ill., for instruction, and on completion to his proper station, from Camp Dodge, Capt. Francis J. Savage, Des Moines.

To Fort Oglethorpe, Evacuation Hospital No. 7, from Fort Riley, Lieut. John A. Matson, Purdy.

To Fort Riley, for instruction, from Chicago, Lieuts. Milton A. Given, Des Moines; Judd C. Shellito, Independence; for duty, from Fort Riley, Lieut. Frederick H. Lamb, Davenport; for instruction, from Kansas City, Lieut. John R. Christensen, Eagle Grove.

To his home and honorably discharged on account of being physically disqualified for active service, Capt. George M. Johnson, Marshalltown.

To Camp Beauregard, Alexandria, La., to examine the command in this specialty, from Philadelphia, Lieut. Fisher B. E. Miller, Cherokee.

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. Frederick L. Wahrer, Fort Madison.

To Chicago, Ill., Presbyterian Hospital, for instruction, Capt. Evarts A. Graham, Mason City.

To Fort Leavenworth, Kan., for duty, Lieut. Earl C. Reynolds, Greenfield.

To Fort Myer, Va., for duty, from Fort Myer, Capt. Stephen A. O'Brien, Mason City.

To Fort Riley for instruction, Capts. William L. Hearst, Cedar Falls; Charles B. Taylor. What Cheer; Lieut. Ben Tallman Whitaker, Boone; Herbert H. Gallatin, Fort Madison; Theodore A. Willis, Iowa City; Leoman D. Huff, Lenox.

To his home and honorably discharged, Lieut. Walter A. Smith, Donnellson.

Mr. and Mrs. A. L. Hopwood of Vinton have received a letter from their son, Major Lucius Hopwood, of the medical corps of the U. S. A., with a picture inclosed showing him with the Duke of Connaught. The duke is a brother of King Edward and uncle of the present king of England. The picture was taken in France while they were on a tour of sanitary inspection of the city. Major Hopwood is the highest ranking officer in the U. S. A. from Vinton and has taken the examinations for lieutenant colonel and is awaiting his appointment.

Dr. Hopwood was formerly assistant in Dr. D. S. Fairchild's office in Des Moines and Drake University Medical School.

Capt. J. V. Littig, of Davenport, has been promoted to the rank of major, and has been trans-

ferred from Fort Riley to Camp Zachary Taylor, Louisville, Ky., where he is to have complete charge of the eye, ear, nose and throat department in the base hospital.

Lieut. Hugh P. Barton, of Davenport, has been ordered to Camp Dodge.

Major Chas. E. Ruth, Des Moines, has been ordered from Fort Riley to Fort McHenry, Maryland.

Lieut. Fred C. Smith, of Keokuk, has been ordered to the naval base hospital at Hampton Roads.

Supplement to list of Iowa physicians who have been recommended by the Surgeon-General for commissions in the Medical Officers' Reserve Corps.

Don Hamilton Newland, 1st Lieut., Belle Plaine.

Calvin Waldo Harned, Capt., Des Moines.

Rosewell Herschell Payne, 1st Lieut., Des Moines.

George Spurgeon Yates, 1st Lieut., Des Moines.

Hiram Henry Hunt, 1st Lieut., Hazelton.

Edwin Cleveland Yoder, 1st Lieut., Iowa City.

Eugene Henry McCaffrey, 1st Lieut., Maquoketa.

Charles Walter Lyon, Capt., Marne.

Chetwynd Marr Franchere, 1st Lieut., Mason City.

William M. Trotter, Capt., Maxwell.

John Edward Morgan, Capt., Oskaloosa.

William Noll Gordon, 1st Lieut., Rowan.

Joseph W. B. Flageolle, 1st Lieut., Sioux City.

Prince Edwin Sawyer, Capt., Sioux City.

Fred J. Graber, 1st Lieut., Stockport.

James Everett Edgington, 1st Lieut., Washington.

Charles Troy Farlow, 1st Lieut., Yetter.

THE CHANCES OF A SOLDIER

The military hospitals commission at Quebec has kept an account of how Canadian troops have fared in the war, and has compiled some interesting statistics based upon its investigations and observations:

If YOUR BOY is at the FRONT—

He has twenty-nine chances of coming home to one chance of being killed.

He has ninety-eight chances of recovering from a wound to two chances of dying.

He has only 1 chance in 500 of losing a limb.

He will live five years longer because of physical training.

He is freer from disease in the Army than in civil life.

He has better medical care at the front than at home.

In other wars from ten to fifteen men have died from disease to one from bullets.

In this war one man dies from disease to every ten from bullets.

This war is less wasteful of life than any other in history.

Only 10 per cent. of all Canadians disabled for further service have been physically unable to engage in their former occupations.

BOOK REVIEWS

PROGRESSIVE MEDICINE

A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Assisted by Leighton F. Appleman, M.D., Lea and Febiger, Philadelphia, New York. Six Dollars Per Annum. December Number, Volume 20.

The first section of volume four is prepared by Martin E. Rehfus, M.D., Instructor in Medicine, Jefferson Medical College. Dr. Rehfus calls attention on the first page to the fact that the French and German journals relating to the science of medicine have been almost entirely cut off and that the great English journals are mostly devoted to war problems. Scientific work in medicine in all these countries has stopped, and therefore we must look to America for the remainder of the war and for years to come for the greater part of scientific work in internal medicine. Diseases of the stomach are chiefly considered with especial reference to diagnosis. We have not been able to discover anything new, chiefly emphasizing points already accepted and adding evidence in support of methods of procedure and treatment. The old contention of the relation of cancer to ulcer which has agitated the mind of the internist for several years, on a basis of 443 cases of operation for cancer, it is alleged that in only 7 per cent. was there a reliable history of pre-existing ulcer. An interesting reference is made to trans-duodenal lavage in the treatment of "auto-intoxication." An abstract is given of the experimental work of Rosenow in the etiology of cholecystitis and gall-stones, and of intestinal conditions from the Mayo Clinic.

The review of the literature on Diseases of the Kidneys is prepared by J. Harold Austin, M.D., of the Department of Medicine, University of Pennsylvania, and Genito-Urinary Diseases by Charles W. Bonney, M.D., of Jefferson Medical College. An abstract is given of Dr. W. J. Mayo's paper on an analysis of 450 nephrectomies at the Mayo Clinic.

Considerable space is given to a review of the literature on the surgery of the prostate gland. A reference is given to secondary hemorrhage in prostatectomy, which appears from the fourth to the seventh day, treated by removing all tubes, hypodermic of morphine, and an ice bag. As to suprapubic and perineal operations there is little difference in the hands of an expert, but to the less experienced operator, the supra-pubic route is the safer.

The literature on Surgery is reviewed by Dr. Joseph C. Bloodgood, and consists almost entirely of military surgery, largely of the surgery of the extremities, and of great interest and value. Dr. Bloodgood gives the most approved methods—is careful and judicious—a characteristic of all Dr. Bloodgood's work.

Dr. H. R. M. Landis of the University of Pennsylvania, gives an excellent therapeutic referendum.

DISEASES OF THE SKIN, THEIR PATHOLOGY AND TREATMENT

By Milton B. Hartzell, A.M., M.D., L.L.D., Professor of Dermatology in the University of Pennsylvania. Fifty-one Colored Plates and 242 Cuts in the Text. J. B. Lippincott Company, 1917. Price, \$7.00.

Recently several important new books have appeared, based largely on the individual experience of the author, and several new editions of books from authors whose work has been before the profession a considerable number of years. In these latter instances, the book is almost new, due to the rewriting of many chapters. It is thus apparent that authors of books and publishers realize that the reprinting of an old edition will not meet the demands of the reading portion of the medical profession. It is our custom when a new edition of an important book appears, to compare the new edition under review with the edition which immediately preceded it, and we have been impressed with the truth of the claim set forth in the preface, that Hartzell's book is entirely new. We have before us, therefore, a general outline or framework for the consideration of special conditions. Logically we have first inflammations of the skin classified according to the predominating symptoms, pathology, and the etiological factors involved; then the forms of inflammation due to local toxic effects or absorption of toxic influences from the intestinal tract, anaphylaxis, toxemia, etc. There are chronic inflammations of the skin of unknown etiology, in which general conditions of the system must be considered and which are treated by tonics and general systemic remedies. The division including eczemas receives much consideration, and the text is beautifully illustrated by plates which are extremely helpful in studying this distressing and troublesome disease. There are many forms of chronic inflammations of the skin due to different causes which can only be kept in mind by the student and general practitioner by frequently consulting special works on dermatology, and the book before us offers many advantages on account of the clear and concise manner in which the main facts are presented.

Considerable space is given to syphilitic inflammations of the skin which are of so much interest to the physician at the present time. Parasitic diseases of the skin, both vegetable and animal, receive full consideration, also inflammations derived from animal sources, as anthrax, actinomycosis and glanders—hemorrhage, atrophies, new growths, neuroses, etc. The last 100 pages are given to diseases of the appendages. This, as has been stated, is an entirely new book which the physician may consult with great advantage. It is a difficult subject, but diseases of the skin are so common and so many patients go from one doctor to another without exciting

interest, that a study of these diseases must necessarily bring credit and profit to the doctor who has the patience to give them intelligent advice and treatment.

SURGERY AND DISEASES OF THE MOUTH AND JAWS

A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures, by Vilray Papin Blair, A.M., M.D., F.A.C.S., Professor of Oral Surgery in the Washington University Dental School, and Associate in Surgery in the Washington University Medical School. Third Edition, Revised so as to Incorporate the Latest War Data Concerning Gunshot Injuries of the Face and Jaws. Compiled by the Section of Surgery of the Head Subsection of Plastic and Oral Surgery, Office of the Surgeon-General of the Army, Washington, D. C., With 460 Illustrations. Price \$6.00. C. V. Mosby Company, 1917.

This book has evidently been prepared with great care as shown by a copious index, a full table of contents and list of illustrations. It is printed on heavy paper which makes it possible to bring out the illustrations in a most satisfactory manner. It is a fine example of book-making.

At this time when plastic surgery of the face and jaws is so important in reconstruction work, we are sure this book will be welcomed by the profession. Some twelve chapters are devoted to accidents and injuries to the soft parts and bones, while the remaining fifty-four chapters are given to a consideration of diseases and deformities. One chapter considers the extraction of teeth; two chapters to infections of the mouth and the teeth; a chapter to affections of the salivary glands. Facial clefts, palate and lip clefts, include several chapters.

The excellent illustrations increase to a marked degree the helpfulness and value of the book.

IMPOTENCE AND STERILITY WITH ABERRATIONS OF THE SEXUAL FUNCTION AND SEX-GLAND IMPLANTATION

By G. Frank Lydston, M.D., C.L., Formerly Professor of the Surgical Diseases of the Genito-Urinary Organs and Syphilology in the Medical Department of the State University of Illinois. Price \$4.00. Sold by Subscription Only. Sent Postage Prepaid on Receipt of Subscription Price. The Riverside Press, Chicago, 1917.

This book of 333 pages, presents in a very readable manner, modern views on the subjects indicated on the title page. Dr. Lydston is one of the best known writers on genito-urinary subjects, and the large amount of clinical material which has come under his observation, has given him unusual opportunities to study sterility, impotence, and aberrations

of the sex function. Dr. Lydston holds important views in relation to a hormone theory of aberrations of sex function which he sets forth in this book. Readers of recent medical journal literature, will recall the interesting experiments on sex-gland implantation which are presented in full in this work.

The general practitioner is often confronted with questions which come to him which he is at loss to answer from his own experience, and will find what Dr. Lydston says of very material help. The legal profession will find certain chapters of material help in preparing cases. The chapters on treatment are very important.

FOOD FOR THE SICK

A Manual for Physician and Patient. By Solomon Strouse, M.D., Associate Attending Physician, The Michael Reese Hospital; Professor of Medicine at the Post-Graduate School; and Maud A. Perry, Dietician at the Michael Reese Hospital, Chicago. 12 mo. of 270 Pages. W. B. Saunders Company, 1917. Cloth \$1.50.

This, as the title indicates, is a book on foods for the sick, prepared carefully in a way to show the necessity of food and how to select and prepare it for different forms of disease. Tables are prepared to show the average composition of common American food products. The knowledge derived from a study of these tables is fundamental to the formation of a diet to suit different conditions of disease. The question is taken up of a suitable diet for diabetes. Formerly we were in the habit of directing articles of food which should not be used by the patient who stumbled along until he finally gave up the restricted diet or modified it to suit his own notions. In this book a construction plan has been adopted of formulating as balanced a diet as possible consistent with the form of disease; a diet agreeable to the patient which excites his interest and cooperation. This plan has been adopted so far as diabetes is concerned and has been extended to meet the food indications in diseases of the kidneys, stomach, intestines, liver, respiratory system, the skin and in fevers.

A brief exposition is given of the essential nature of certain diseases, what can be accomplished by dietary plans and the necessity for food considerations. The constructive formula given throughout the book is not only interesting but helpful to both patient and physician.

SOCIETY PROCEEDINGS

The regular meeting of the Dubuque County Medical Society was held February 12 at the Commercial Club, Dubuque.

The scientific subject for consideration was Diseases of the Bones and Joints. Under the Role of Metastasis in Bone and Joint Inflammations, Dr. J. H. Schrup's paper dealt with the time and sites of

the metastases in the various diseases and infections, the diagnostic signs and symptoms at the point of infection, and emphasized the necessity of immediate surgical treatment to avoid the usual destruction of bone and joint.

In dealing with Fractures and Dislocations of the Upper Extremity, Dr. A. M. Loes, in an extemporaneous manner, emphasized the importance of having skiagrams as a means of a correctly diagnostic basis of osseous tissue. The Doctor used many plates, illustrative of personal cases to show the importance of skiagraphic work, and his interesting talk on the subject of diagnosis contributed very greatly to the success of the meeting.

The subject of Dr. J. C. Hancock's paper was The Principles and Use of the Bone Graft in Surgery, and in connection with the paper a number of bone instruments was exhibited.

At this meeting, a committee was appointed to determine the advisability of remitting to a colleague, who has left for service, a certain percentage of the pay received from his former patients.

Some time was given, as the culmination of past efforts, to the problem of dealing with quacks and unlicensed practitioners.

At the meeting of the Johnson County Medical Society held February 6, at the University Hospital, Dr. Bundy Allen gave a five minute abstract on the x-ray dosage as follows:

The Coolidge tube and the Holtzknecht radiometer make the accurate measurement of the x-ray dosage quite simple. The unit of measurement is 1 Holtzknecht. The Holtzknecht radiometer consists of a graduated color plate, brownish in color ranging in density from 3 to 24 "H" units. The essential part of the instrument is the platino-cyanide of barium pastel which when exposed to the ray changes in color ranging in color from an apple green to a brown, and the reading is made by comparing the color change in the pastel with the graduated scale, above mentioned color scale.

The unit 1 "H" is one-third of that form of radiant energy which will produce a light uniform reaction of the skin of the face of an adult. To administer the maximum dose without reaction, the following rule will serve as a guide: In treating middle-aged adults to the face, 2 "H," to the head and joints 3 "H," to the body 3, 4 to 5 "H;" to children, 1 "H," 2 "H," and 3 "H;" to the aged, 3 "H," 4 "H," 5 "H." This dose may be given at one sitting, or divided. There ought to be an intermission of three weeks between massive doses at one sitting. Dr. Allen finds this method of measuring dosage quite valuable.

The abstract presented by Dr. A. C. Davis was along the line of scurvy. Dr. Davis said that experimental work on guinea pigs has led to the conclusion that scurvy in these animals is not due to the deficiency in the diet of any specific antiscorbutic vitamin. Experiments rather tended to

indicate that constipation is the most important etiological factor. After having produced the disease and not in any way altering the diet, complete cures have been brought about by the administration of liquid petrolatum. Attention is directed to previous work by Jackson and Moody in which a diplococcus was isolated from the congested joints of animals suffering from scurvy. These authors suggest that the possibility of fecal impaction producing sufficient injury to the cecal wall of the guinea pig is sufficient to permit the invasion of the body tissue by bacteria.

Dr. C. J. Rowan presented two clinical cases illustrating different forms of actinomycosis, one pulmonary and one intestinal with secondary involvement of the chest wall and abdominal wall respectively. These cases were typical of actinomycosis in (a) the deep purple color of the involved skin; (b) the great amount of solid exudate; (c) the involvement of all tissues in the path of the infection; (d) the honeycombing of the mass with small abscess. In both cases the ray fungus was easily found on microscopic examination.

In his paper on the Symptoms and Diagnosis of Gall-Bladder Disease, in discussing chronic cholecystitis, Dr. C. J. Rowan said that the most difficult diagnosis is between gastric and duodenal ulcer and chronic cholecystitis because symptoms may nearly all be referred to the stomach, and there even may be food ease, pyloro spasm and hyperacidity in cholecystitis, and in the atypical cases the x-ray may fail to demonstrate an ulcer. In these cases a mistake in diagnosis is not serious. It is serious, however, to mistake a kidney lesion for cholecystitis, and it sometimes requires a very minute examination of the urine to exclude the kidney, possibly with ureteral catheterization and pyelography.

There is very little excuse for mistake in diagnosis when we have present, syphilis of the liver, gastric crises of tabes, or epigastric hernia, all of which may closely simulate cholecystitis but where the diagnosis is plain if a proper examination is made.

At this meeting a resolution was unanimously passed that the society remit the county dues and pay the state dues of all members in the service.

The regular meeting of the Polk County Medical Society was held at the Savery Tuesday evening, February 26, with a good attendance of the membership and a number of guests from Camp Dodge and the training school at Fort Des Moines.

The program consisted of two papers. One by Dr. Gershom H. Hill which was clinical, illustrating the symptoms and varied course in Manic Depressive Insanity which is oftentimes spoken of as curable but in fact is a recurring disease, without much mental deterioration. It was discussed at length in an earnest, lucid and emphatic manner by Doctors M. N. Voldeng, F. A. Ely and Tom B. Throckmorton.

The Diagnosis of Nephrolithiasis, was the subject of the paper read and illustrated in a convincing

manner by Dr. Edward J. Harnagel. He showed the necessity of securing a good, strong x-ray picture, taken when the colon is empty, in order to make a correct diagnosis of kidney stone and with certainty to determine the exact location of the stone.

The mid-winter meeting of the Southwestern Iowa Medical Society was held at Creston, February 21, under the presidency of Dr. J. C. Ohlmacher, of Clarinda, and was largely attended.

The business session in the morning was followed by a Round Table—ten minute papers on "My Medical Hobby."

In the afternoon the following scientific program was carried out: The New Pharmacology, Dr. C. S. Chase, Iowa City; Therapeutics of Infancy, Dr. C. H. Mitchell, Leon; Bellyache and Physic, Dr. Ralph E. Green, Creston; Diagnosis of Renal and Uretral Calculi, Dr. Edward J. Harnagel; The Problems of the Civilian Doctor, Dr. Chas. S. James, Centerville; Dental Infections, Dr. J. F. Hines, Grand River; Stigmata of Degeneration, Dr. Jeannette F. Throckmorton, Chariton.

THE ANNUAL CLINIC OF THE COLLEGE OF MEDICINE

The State University of Iowa College of Medicine announces that the usual annual clinic held in April will not be held this year on account of the war.

DEATHS

Albertus Joseph Burge, M.D., aged forty-seven; State University of Iowa College of Medicine, 1900; Fellow of the American College of Physicians and Surgeons; Fellow of the American Medical Association; member of Western Surgical Association; member of Iowa State and Cerro Gordo County Medical Societies; for twelve years a member of the faculty of his alma mater; died at his home in Iowa City after a lingering illness from pernicious anemia, February 2.

David R. Hindman, M.D., aged eighty-six; Homeopathic Medical College of Pennsylvania, 1857; a veteran of the Civil War; one of the pioneer physicians of Iowa having practiced in Marion for nearly fifty years; died at his home in Marion, February 25.

R. H. Payne, M.D., aged eighty-one; College of Physicians and Surgeons, Keokuk, 1863; a practitioner in Iowa for over fifty years; died at his home in Richland, February 10.

William David Craig, M.D., aged fifty-two; State University of Iowa College of Medicine, 1894; Fellow of the American Medical Association; member of Iowa State and Mills County Medical Society; died at his home in Henderson in February.

William M. Scott, M.D., aged eighty-two; College of Physicians and Surgeons, Keokuk, 1861; a native of Iowa; a surgeon in the Civil War, died at his home in Centerville, February 1.

Lindus L. Riggs, M.D., aged forty-nine; College of Physicians and Surgeons, Keokuk, 1904; Jefferson Medical College, 1905; Coroner of Jackson county; Fellow of the American Medical Association, mem-



DR. LINDUS L. RIGGS

ber of Iowa State and Jackson County Medical Societies; died suddenly at his home in Maquoketa from angina pectoris, February 7.

William E. Robinson, M.D., aged fifty-two; State University of Iowa College of Medicine, 1893; Member of Iowa State and Fayette County Medical Societies, died at his home in Oelwein, February 13.

Elbridge Harrison King, M.D., aged seventy-four; Detroit Medical College, 1870; Fellow of American College of Surgeons; Fellow of the American Medical Association; Member of Iowa State and Muscatine County Medical Societies; secretary of his county society for several years; local surgeon of Chicago Milwaukee and St. Paul Railway; coroner of Muscatine county; a veteran of the Civil War; died at his home in Muscatine from lobar pneumonia, February 14. Dr. King was one of the pioneer physicians and surgeons of Iowa, having practiced medicine in Hardin and Muscatine counties for a period of forty-seven years. A wife and five children survive him, among whom are Dr. E. R. King, of Letts, Lieut. Col. A. A. King, of Camp Green, N. C., and Maj. Joseph C. King, of California.

James H. Noyes, M.D., aged eighty-three; Columbia University College of Physicians and Surgeons, 1861; dean of the medical profession of Boone county; a practitioner for nearly fifty years; died at his home in Ogden, January 31, from paralysis.



For the relief of the nervous disturbances incidental to the menopause, and in Dysmenorrhea, Amenorrhea, Hysteria and Neurasthenia, prescribe—

Corpus Luteum (*Armour*)

2 and 5 grain Capsules, 2 grain Tablets

Red Bone Marrow

Where there is blood dyscrasia, give Extract of Red Bone Marrow.

Pituitary Liquid

In obstetrics, to produce peristalsis after operations and in cases of shock, Pituitary Liquid, (*Armour*). Physiologically standardized and free from inhibitors, $\frac{1}{2}$ cc and 1cc ampoules.

Surgical Catgut Ligatures

Armour's Surgical Catgut Ligatures are smooth, strong, supple and thoroughly sterile. All sizes, plain and chromic.

Write for Literature

ARMOUR AND COMPANY CHICAGO

2309

INFLUENZA (La Grippe)

AND

ATOPHAN

Now Manufactured in U. S. A.

Distributed Exclusively by

Shering & Glatz, Inc.
150 Maiden Lane, NEW YORK

¶ Influenza (La Grippe), a grateful field of activity for ATOPHAN.

¶ Here it can broadly display its superior constitutional anti-inflammatory and pain-relieving properties.

¶ Seven and a half to fifteen grains, two or three times daily, help readily to alleviate the respiratory inflammation, the congestive headache, the pain and stiffness of limbs and back, etc.

¶ And ATOPHAN acts without cardiac depression, excessive diaphoresis, constipation or kidney irritation.

¶ For the control of the fever, of course, a more active antipyretic is needed to back up the good work of ATOPHAN.

MEDICAL NEWS

Dr. T. C. Cooper, formerly of Ogden, who spent a year in a base hospital in London, is now on the staff of the Kansas State Hospital, at Topeka.

The Presbyterian Hospital at Des Moines, has been purchased by the city council to be used for the internment of men and women afflicted with venereal diseases. Dr. H. L. Saylor, city health physician, will be in charge of the institution, under the direction of the government health authorities.

Dr. Albert A. Anderson, of Des Moines, suffered a fractured shoulder when struck by a Northwestern train recently; an attack of pneumonia followed the injuries, and he is critically ill.

Dr. Lillie A. Arnett, of Cedar Falls, was ordered to report to an Eastern concentration camp March 1, preparatory to leaving for France for Red Cross duty.

Lieut. Prentiss B. Cleaves, of Cherokee, who is stationed at Fort Worth, has been promoted to the rank of captain.

Word has been received in Council Bluffs that Unit K has arrived safely "Somewhere in France." Unit K was stationed for some time at Fort Porter, N. Y., preparatory to leaving for France.

MARRIAGES

Dr. W. E. Anspach, of Colfax, to Miss Rachel Sykes, of Ida Grove, February 5.

Dr. Earl R. Leonard, Akron, to Miss Thelma Louise Nicholl, of Auburn, Nebraska, at Auburn, February 6.

Dr. Elmer P. Weih, of Clinton, to Miss Grace Evans, of Clinton, February 21.

BIRTHS

Dr. and Mrs. Paul O. Anderson, of Bouton, a son.

Dr. and Mrs. P. B. Glew, of Dallas Center, a son.

CHANGES OF LOCATION

Dr. W. J. Wulstein, of Peoria, Ill., has located at Varina, associating himself with Dr. W. C. Porath.

Dr. R. M. Wallace, of Titonka, has sold his practice to Dr. Pierre Sartor, of Bancroft. Dr. Wallace removes to Algona.

Dr. William Morton, of Iowa Falls, has removed to Gallop, New Mexico.

Dr. M. R. Wagoner, of Delmar, has located in Maquoketa.

Dr. Paul E. Allen, of Alburnette, has been appointed on the staff of physicians at the State Hospital, Cherokee.

Dr. J. C. Hastings, of Alta Vista, has removed to Elma.

Dr. C. G. Stookey, of Toledo, has located at Olin, purchasing the practice of Dr. Seward White.

Dr. I. S. Buzzard, of Waterloo, has removed to Carroll.

Dr. M. J. Silver, of Chicago, has associated himself with Dr. J. E. Conn, of Ida Grove.

Dr. Martin Spellman, of Paynesville, Minn., has located at Knoxville.

Dr. J. A. Valenta, formerly of Iowa City, has succeeded to the practice of Dr. J. F. Hull, of Lake City, who removes to California.

In the British Medical Journal October 20, 1917, Dr. Carver, M.R.C.P., London, emphasizes the necessity of specifying a reliable brand of thyroids and thyroid tablets. He called attention to the way in which some manufacturers label their preparations.

If the doctor will demand Armour's he will know that his patient gets a specific quantity of thyroid tissues because we standardize our desiccated thyroids and thyroid tablets.

Each thyroid tablet (Armour) contains a certain quantity of standardized thyroids and that amount of thyroids represents five times as much fresh thyroid gland.

Whenever a preparation of any of the endocrine glands is required, the physician should specify Armour's and see that his patient gets Armour's.

The doctor prescribes a preparation for a certain purpose and he can expect results only from first class products.

Why Use Slow X-Ray Plates?

The statement is frequently made that the Paragon X-Ray Plates made before the war cut off foreign gelatine supply were the finest ever used. After long experiment we have been able to duplicate the speed and quality, and now offer them for your best work.

Use Paragon X-Ray Plates for highest grade of work. They are not surpassed by any. Late runs show the famous old-time Paragon quality. War troubles have been overcome.

If a lower priced plate is wanted our Universal Brand cannot be beat for the money. The new emulsion now used is very fast—30 per cent richer than before—giving brilliant black and white effects.

Both brands are adapted for use with or without intensifying screen.

Fast plates conserve tubes. Bear that in mind when you consider prices on plates.

Send for price list of dependable X-Ray Supplies.

BARIUM SULPHATE High Quality—Low Price. A feature with us, as we take the entire output of a factory specializing on this.



Geo. W. Brady & Co.
786 S. Western Ave., CHICAGO



JOHN NELSON WARREN, M.D.
PRESIDENT

IOWA STATE MEDICAL SOCIETY
1917-1918

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, APRIL 15, 1918

No. 4

Iowa State Medical Society

**Sixty-Seventh Annual Session
Fort Dodge
May 8, 9 and 10, 1918**

Program

OPENING EXERCISES

**Wednesday, May 8
9:00 a. m.**

Call to Order by the President—

J. N. WARREN, M.D., Sioux City

Invocation—

REV. F. E. DRAKE, Fort Dodge

Address of Welcome for the City—

MAYOR J. F. FORD, Fort Dodge

Address of Welcome for the Profession—

W. W. BOWEN, M.D., Fort Dodge

Response—

M. J. KENEFICK, M.D., Algona

SCIENTIFIC PROGRAM

Section on Medicine—

Chairman, CAMPBELL P. HOWARD, M.D., Iowa City

Section on Surgery—

Chairman, PHILIP B. McLAUGHLIN, M.D., Sioux City

**Wednesday, May 8
9:30 a. m.**

1. Perineal Prostatectomy—
JENNINGS CRAWFORD, M.D., Cedar Rapids, *twenty minutes*
Discussion opened by R. A. WESTON, M.D., Des Moines, *five minutes*
2. Foreign Proteids in Therapeutics—
EVAN S. EVANS, M.D., Grinnell, *twenty minutes*
Discussion opened by G. S. BROWNING, M.D., Sioux City, *five minutes*
3. Relationship of Respiratory Infection to Digestive Disturbances in Infants and Children—
A. B. BEIFELD, M.D., Iowa City, *twenty minutes*
Discussion opened by D. E. BEARDSLEY, M.D., Cedar Rapids, *five minutes*
4. The Doctor in the Army—
LEWIS SCHOLLER, M.D., Des Moines, *twenty minutes*
5. Some of the Newer Points in Relation to Tuberculosis—
J. W. KIME, M.D., Fort Dodge, *twenty minutes*
Discussion opened by H. V. SCARBOROUGH, M.D., Oakdale, *five minutes*

**Wednesday, May 8
1:00 p. m.**

Symposium on the Hematopoietic System

6. The Histologic and Etiologic Aspects of the Diseases of the Hematopoietic System—
G. W. KOCH, M.D., Sioux City, *twenty minutes*
7. The Pathologic and Diagnostic Aspects of the Diseases of the Hematopoietic System—
W. E. SANDERS, M.D., Des Moines, *twenty minutes*
8. The Modern Therapeutic Aspects of Diseases of the Hematopoietic System—
F. J. ROHNER, M.D., Iowa City, *twenty minutes*
Discussion of the Symposium on the Diseases of the Hematopoietic System opened by C. A. BOICE, M.D., Washington, *five minutes*
9. Address in Medicine—Pneumonia and its Complications at the Base Hospital, Camp Dodge—
MAJOR JOSEPH L. MILLER, M.O.R.C., Chicago
10. Oration on Surgery—
F. W. CRAM, M.D., Sheldon, *thirty minutes*

4:00 p. m.

Adjournment

Meeting House of Delegates

Wednesday Evening, May 8

Social Entertainment—Banquet 6:30 p. m.
Ball Room Commercial Club

**Thursday, May 9
9:00 a. m.**

11. Some Results from the Experimental Study of Intestinal Obstruction—
J. T. MCCLINTOCK, M.D., Iowa City, *twenty minutes*
Discussion opened by J. I. MARKER, M.D., Centerville, *five minutes*
12. The Karl Straus Treatment of Dropsy—
M. H. THIELEN, M.D., Grundy Center, *twenty minutes*
Discussion opened by C. H. CRETZMEYER, M.D., Algona, *five minutes*
13. Address of the Chairman of the Section on Medicine—Some of the Medical Lessons of the Present War—
C. P. HOWARD, M.D., Iowa City
14. Myocarditis: Its Recognition and Treatment—
J. R. WALKER, M.D., Fort Madison, *twenty minutes*
Discussion opened by B. L. EIKER, M.D., Leon, *five minutes*

15. Control of Infectious Diseases in the Army—
CAPT. D. J. GLOMSET, M.O.R.C., Des Moines, *twenty minutes*
Discussion opened by CAPT. E. T. EDGERLY, M.O.R.C., Ottumwa, *five minutes*

16. Oration in Medicine—
W. L. ALLEN, M.D., Davenport, *thirty minutes*

Thursday, May 9
1:30 p. m.

17. Address of the Chairman of the Section on Surgery: Hospital Standardization—
P. B. McLAUGHLIN, M.D., Sioux City
18. Address on Surgery— EMIL REIS, M.D., Chicago
19. Bone Surgery of the Skull—
WM. JEPSON, M.D., Sioux City, *twenty minutes*
Discussion opened by O. J. FAY, M.D., Des Moines, *five minutes*
20. Bone Surgery of Upper Extremities—
CHAS. RYAN, M.D., Des Moines, *twenty minutes*
Discussion opened by J. LYNN CRAWFORD, M.D., Cedar Rapids, *five minutes*
21. Fractures Complicating the Joints of the Upper Extremities—
C. S. JAMES, M.D., Centerville, *twenty minutes*
Discussion opened by W. W. MCCARTHY, M.D., Des Moines, *five minutes*
22. Plastic Surgery of the Nerves—
J. A. DALES, M.D., Sioux City, *twenty minutes*
Discussion opened by W. A. RHOLF, M.D., Waverly, *five minutes*
23. The Etiology and Treatment of Interstitial Keratitis with Special Reference to the Teeth
HAROLD GIFFORD, M.D., Omaha

Thursday, May 9
7:30 p. m.

24. President's Address—
J. N. WARREN, M.D., Sioux City
25. The Bone Transplant in the Fixation of Fractures—(Lantern illustrations)
J. C. ROCKAFELLOW, M.D., Des Moines, *twenty minutes*
Discussion opened by FRITZ ROSENBLADT, M.D., Council Bluffs, *five minutes*
26. Fractures Complicating the Joints of the Lower Extremities—(Lantern illustrations)
A. P. STONER, M.D., Des Moines, *twenty minutes*
Discussion opened by L. W. LITTEG, M.D., Iowa City, *five minutes*

Friday, May 10
9:00 a. m.

27. Plastic Surgery of the Face and Neck—
J. H. MCGREADY, M.D., Independence, *twenty minutes*
28. The Diagnosis and Treatment of Peptic Ulcer—
J. T. STRAWN, M.D., Des Moines, *twenty minutes*
Discussion—Medical Aspects—opened by W. R. BROCK, M.D., Sheldon, *five minutes*. X-ray Aspects—opened by A. E. ECHTERNACHT, M.D., Mason City, *five minutes*
29. Meso-tendons of Tendons of the Leg and Foot in Relation to Tendon Transplantation—
H. J. PRENTISS, M.D., Iowa City, *twenty minutes*
Discussion opened by JOHN HAMILTON, M.D., Cedar Rapids, *five minutes*

30. Surgery of Tendons—
ARTHUR STEINDLER, M.D., Iowa City, *twenty minutes*
Discussion opened by J. W. COKENOWER, M.D., Des Moines, *five minutes*

31. Some Aspects of Arteriosclerosis—
T. N. WALSH, M.D., Hawkeye
Discussion opened by N. SCHILLING, M.D., New Hampton
Report of Transactions of House of Delegates—
TOM B. THROCKMORTON, M.D., Secretary, Des Moines

OPHTHALMOLOGY, OTOTOLOGY AND RHINO-LARYNGOLOGY SECTION

Chairman

Harvey B. Gratiot, M.D., Dubuque

Thursday, May 9
9 a. m.

Chairman's Address— H. B. GRATIOT, M.D., Dubuque

1. Report of Cases of Face Injuries, with Involvement of Maxillary Antrum—
J. B. NAFTZGER, M.D., Sioux City
2. Some Methods for Determining the Hearing Range—
C. C. BUNCH, Research Assistant in Psycho Physics of Otology, University of Iowa, Iowa City
3. Fracture of the Hyoid Bone—
W. W. PEARSON, M.D., Des Moines
4. Treatment of Chronic Dacryocystitis—
HAROLD GIFFORD, M.D., Omaha
5. Address— MAJOR F. C. TODD, Camp Dodge, Des Moines
6. Repair of the Ear Drum—
A. J. JOYNT, M.D., Waterloo
7. Graduated Tonsillectomies—
F. G. MURPHY, M.D., Mason City

HOUSE OF DELEGATES

Meeting Place—Dining Room, Commercial Club

Wednesday, May 8
4:00 p. m.

Roll Call
Report of Secretary
Report of Treasurer
Report of Council
Report of Trustees
Report of Standing Committees
Memorials and Communications
New Business
Election of Committee on Nominations

Thursday, May 9
8:00 a. m.

Roll Call
Reading of Minutes
Report of Committees
Unfinished Business
New Business

Friday, May 10
8:00 a. m.

Roll Call
Reading of Minutes
Report of Committee on Nominations
Election
Report of Committees

Unfinished Business
New Business

MEETING PLACES

- Headquarters—The Waukonsa
- General Meetings—Ball Room, Commercial Club
- House of Delegates—Dining Room, Commercial Club
- Eye and Ear Section—Committee Room, Commercial Club
- Registration and Exhibits—Lounging Room, Commercial Club
- Headquarters for Ladies—The Waukonsa

Rules for Papers

No paper before the Society shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes nor more than once on the same subject. This does not apply to the addresses and orations.

All papers read before the Society shall be its property. Each paper shall be deposited with the Secretary when read, and if this is not done, it shall not be published.

On arising to discuss a paper, the speaker will please announce his name plainly.

Please remember to REGISTER.

ENTERTAINMENT

Wednesday, May 8

- Reception for the Visiting Ladies in the afternoon at the Country Club
- Banquet, Ball Room, Commercial Club, physicians, and their wives and guests, six-thirty

Thursday, May 9
2:00 p. m.

- Theatre party for the ladies at the Strand

OFFICERS
1917-1918

- PRESIDENT
- J. N. WARREN, M.D. Sioux City
- PRESIDENT-ELECT
- MAX E. WITTE, M.D. Clarinda
- FIRST VICE PRESIDENT
- M. J. KENEFICK, M.D. Algona
- SECOND VICE PRESIDENT
- E. B. HOWELL, M.D. Ottumwa
- SECRETARY
- T. B. THROCKMORTON, M.D. Des Moines
- TREASURER
- T. F. DUHIGG, M.D. Des Moines
- EDITOR
- D. S. FAIRCHILD, M.D. Clinton

COUNCILORS	Term Expires
1st. District—John R. Walker, M.D., Fort Madison.....	1920
2nd. District—L. W. Littig, M.D., Iowa City.....	1922
3rd. District—W. A. Rohlf, M.D., Waverly.....	1921
4th. District—Paul E. Gardner, M.D., Ch'm., New Hampton	1919
5th. District—G. E. Crawford, M.D., Cedar Rapids.....	1918
6th. District—S. A. Spilman, M.D., Ottumwa.....	1918
7th. District—Channing G. Smith, M.D., Granger.....	1919
8th. District—J. F. Aldrich, M.D., Shenandoah.....	1919
9th. District—A. L. Brooks, M.D., Audubon.....	1922
10th. District—W. W. Beam, M.D., Rolfe.....	1921
11th. District—G. C. Moorehead, M.D., Sec'y, Ida Grove.....	1920

TRUSTEES	
Chairman, Des Moines.....	1919
Waukon.....	1918
Clarinda.....	1920

DELEGATES TO A. M. A.	
W. B. Small, Waterloo.....	1919
L. W. Littig, Iowa City.....	1918
M. N. Voldeng, M.D., Woodward.....	1918

ALTERNATES	
Des Moines.....	1919
Waukon.....	1918
Cedar Rapids.....	1918

COMMITTEES	
MEDICO LEGAL	
Clinton.....	1918
Council Bluffs.....	1919
Des Moines.....	1920

HEALTH AND PUBLIC INSTRUCTION	
Paul E. Gardner, M.D., New Hampton.....	1918
Jeannette F. Throckmorton, M.D., Chariton.....	1920
Henry Albert, M.D., Iowa City.....	1919

CONSTITUTION AND BY-LAWS	
M.D.....	Ottumwa
D.....	Council Bluffs
M.D.....	Algona

CONSERVATION OF VISION AND HEARING	
Langworthy, M.D.....	Dubuque
McManus M.D.....	Waterloo
Reeder, M.D.....	Sioux City

PUBLICATION	
I.D.....	Des Moines
.....	Des Moines
.....	Waterloo

SCIENTIFIC WORK	
.....	Ottumwa
M.D.....	Des Moines
Surgeon, U. S. N.....	Des Moines

FINANCE	
.....	Des Moines
.....	Burlington
.....	Fort Dodge

PUBLIC POLICY AND LEGISLATION	
Thos. F. Duhigg, Ass't Surgeon, U. S. N.....	Des Moines
B. L. Eiker, M.D.....	Leon
Major W. S. Conkling, M.D.....	Des Moines
J. F. Herrick, M.D.....	Ottumwa
Tom B. Throckmorton, M.D.....	Des Moines

SPECIAL COMMITTEE ON WORKMEN'S COMPENSATION	
D. S. Fairchild, M.D.....	Clinton
H. C. Eschbach, M.D.....	Albia
Lewis Schooler, M.D.....	Des Moines

ARRANGEMENTS	
J. N. Warren, M.D.....	Sioux City
Tom B. Throckmorton, M.D.....	Des Moines
Thos. F. Duhigg, Ass't Surgeon, U. S. N.....	Des Moines
J. W. Kime, M.D.....	Fort Dodge
C. J. Saunders, M.D.....	Fort Dodge

State Society Iowa Medical Women

Twenty-first Annual Session Fort Dodge May 7, 1918

OFFICERS

1917-1918

PRESIDENT

Dr. LAURA HOUSE BRANSON.....Iowa City

FIRST VICE PRESIDENT

Dr. JEANNETTE F. THROCKMORTON.....Chariton

SECOND VICE PRESIDENT

Dr. JOSEPHINE WETMORE RUST.....Fort Dodge

THIRD VICE PRESIDENT

Dr. ROSE BUTTERFIELD.....Indianola

SECRETARY

Dr. IDA G. RHOADES.....Cedar Falls

TREASURER

Dr. NELLE NOBLE.....Des Moines

COUNCIL

Dr. Kate Mason Hogle.....Mount Vernon

Dr. Agnes Eichelberger.....Sioux City

Dr. Lenna L. Means.....Des Moines

Dr. Jennie Ghrist.....Ames

Dr. Georgia Stewart.....Des Moines

Dr. Florence Brown Sherbon.....Colfax

Dr. Kate Harpel.....Boone

Dr. Sophia Hinzie Scott.....Des Moines

Dr. Clara B. Whitmore.....China

Dr. Lily Kinnier.....Dubuque

COMMITTEES

CREDENTIALS

Dr. Mary K. Heard.....Iowa City

Dr. Leone Scruby.....Des Moines

Dr. Grace Yerger.....Waterloo

CONSTITUTION

Dr. Kate A. Mason Hogle.....Mount Vernon

Dr. Mary Killeen.....Dubuque

Dr. Agnes Safley.....Cedar Rapids

ETHICS

Dr. Lily Kinnier.....Dubuque

Dr. Jennie McCowen.....Davenport

Dr. Jane Wright.....Clear Lake

FEDERATION

Dr. Jeannette F. Throckmorton.....Chariton

Dr. Clara Cronk.....Bloomfield

Dr. Tarana Dulin.....Sigourney

PUBLICATION

Dr. Georgia Stewart.....Des Moines

Dr. Sula Webb.....Cedar Rapids

Dr. Cecelia Morris.....Corning

MEMBERSHIP

Dr. Pauline Leader.....Clarinda

Dr. Adele K. Graeming.....Waverly

Dr. Grace O. Doane Crowl.....Des Moines

CHILD WELFARE

Dr. Bertha Allen Greere.....Lamoni

Dr. Margaret Armstrong.....Des Moines

Dr. Pauline Townsend Hanson.....Marshalltown

SCHOLARSHIP LOAN FUND

Dr. Lenna L. Means.....Des Moines

Dr. Agnes Eichelberger.....Sioux City

Dr. Mary Coveny.....Clinton

WAR DEFENSE AND PROTECTION

Dr. Sophia Hinzie Scott.....Des Moines

Dr. Jennie Ghrist.....Ames

Dr. Kate Harpel.....Boone

Dr. Julia Donahue.....Burlington

Dr. Rosina Wistein.....Cedar Rapids

ARRANGEMENTS

Dr. Allie Hoyt Wakeman.....Fort Dodge

Dr. Jessie B. Hudson.....Carroll

Dr. Lena Beach.....Rockwell City

Dr. Evaline Peo.....Boone

Dr. Belle Conrad.....Webster City

Headquarters—The Wahkonsa

Meetings—The Wahkonsa, Ball Room

Program

Tuesday, May 7

9:00 a. m.

Call to Order by President

Reports of Committees

Communications

Business

12:30 p. m.

Luncheon: Y. M. C. A.—By the Women Physicians of Fort Dodge

2:00 p. m.—Scientific Session

Address of Welcome— MRS. SETH THOMAS, Fort Dodge

Greetings— DR. SARA KIME, Fort Dodge

Response— DR. GEORGIA STEWART, Des Moines

Symposium on Pediatrics

President Address—Equality as a Birthright—

DR. LAURA H. BRANSON, Iowa City

Sanitation and Nutrition as Related to Growth and

Development— DR. JOSEPHINE W. RUST, Fort Dodge

Congenital Deformities and Malformations: Reme-

dies— DR. JEANNETTE F. THROCKMORTON, Chariton

Infectious Diseases in Infancy and Childhood—

DR. ROSA E. LOWDER, Maquoketa

Focal Infections— DR. NELLE S. NOBLE, Des Moines

Malignancy in Childhood—

DR. ROSE BUTTERFIELD, Indianola

Prophylaxis and Immunity; Role of Vaccines and

Serums— DR. IDA G. RHOADES, Cedar Falls

Address—The Delinquent Girl—

DR. CLARA P. SEIPPEL, Assistant City Physician of Chicago,
President Chicago Medical Women's Club

Unfinished Business

Reception for Dr. Clara P. Seippel


Banquet, 7:00 p. m.

Club Cafe


All women physicians planning to attend the annual session of the State Society of Iowa Medical Women on May 7, 1918 at Fort Dodge will facilitate matters and add to their own comfort as well by communicating with Dr. Josephine W. Rust, vice-president, 927 Fourth avenue N., Fort Dodge, Iowa, in regard to hotel reservations and accommodations.

Dr. Laura H. Branson, President.


The COMMERCIAL CLUB of FORT DODGE IOWA




INTERIOR VIEWS Committee Room



Lounging Room



Dining Room



Ball Room

Where the Meetings of the General Sessions, Section of Ophthalmology, Otology and Rhinology, House of Delegates, Registration and Exhibits of the Sixty-seventh Annual Session of the Iowa State Medical Society will be held May 8, 9, 10.

THE FORT DODGE SESSION

The annual meeting of the Iowa State Medical Society bids fair to be more than a successful event in spite of the war demands made at this time on both the national and local medical profession.

The Arrangement Committee has selected the Wahkonsa Hotel and the Commercial Club rooms as fitting places for all meetings held in conjunction with the general sessions of the Society.

The Wahkonsa is a modern, up-to-date hostelry, and is thoroughly prepared to take care of its guests. The Commercial Club rooms are connected with the fourth floor of the hotel. The direct communication of the Wahkonsa as headquarters and the Commercial Club rooms, where the meetings will be held, thus affords a distinct advantage, and one which the Arrangement Committee believe will meet with the approval of all. Two other hotels are also at the service of visiting physicians; and in the event of too great an influx, the local Arrangement Committee has promised to have at the registration bureau a list of available rooms in private residences where one may find rest and refreshment. Let none, therefore, who contemplate being present at the Fort Dodge session remain at home for fear of shortage in food and rooms.

FORT DODGE

Fort Dodge was incorporated in 1869 and from a straggling frontier village of a few inhabitants it has become a prosperous city of 22,000 population. The city was named in honor of General Augustus Caesar Dodge and is built on the site of the fort of the same name, established by the government in the early history of Iowa as a protection against the Indians of the Sac and Fox tribes.

From the deposits of gypsum rock during the glacial period and the clay formations through the ages, large industries have developed and the finished products from these deposits constitute our chief claim for distinction.

The large growth in the past few years in manufacturing and jobbing has been such that Fort Dodge has become known as the commercial center of Northwestern Iowa.

The improvement in Fort Dodge in recent years has been remarkable and inquiry comes often for facts regarding this development. As has been stated the gypsum and clay industries are our chief claim for distinction. Nature has been profuse in her kindness in giving Fort Dodge her many advantages. Lying in the heart of rich agricultural district, it is surrounded by land underlaid with an inexhaustible supply of gypsum rock, one of the largest and purest gypsum plaster rock deposits in the United States. The slogan "**We plaster the Earth**" has become a veritable truth of this gypsum city.

In the gypsum industry, five mills turn out annually 460,000 short tons valued at \$1,500,000, and employ 1,000 people in their operation. The companies turning out this product are the U. S. Gypsum Company, the Plymouth Gypsum Company, the Cardiff Gypsum Company, the American Cement Plaster Company and the Wasem Plaster Company.

The clay industry of Fort Dodge promises to surpass the gypsum interests, Webster county having the greatest output of clay products of any county in the state, the products being brick, tile and sewer pipe. In this industry five mills turn out 225,000 short tons annually valued at \$1,800,000, and employing 500 people in their operation.

The companies turning out this product are operated by the Vincent Clay Products Company, the Plymouth Clay Products Company, the Lehigh Sewer Pipe and Tile Company, the Fort Dodge Brick & Tile Company and Johnston Bros. Clay Works. The capital employed in these industries is over a million dollars for each industry.

Fort Dodge has the third largest mill of the Quaker Oats group, and manufactures into the famous Quaker Oats 20,000 to 25,000 bushels of oats per day. They also grind from 4,000 to 5,000 bushels of corn per day, day and night shift, and have in their employ from 300 to 400 people.

A new municipal building was erected last year at a cost of \$125,000 and a new municipal dam across the Des Moines river is now being constructed at a cost of approximately \$100,000, bonds to that amount having been voted and issued for that purpose. This dam is now completed.

Fort Dodge has three trunk lines of railroad. The Illinois Central from Chicago to Omaha, Minneapolis and St. Paul, and from Fort Dodge to Sioux City, with a line from Cherokee on the Fort Dodge Sioux branch, to Sioux Falls, South Dakota. The Chicago Great Western from Chicago to Omaha, and from Fort Dodge to Minneapolis and St. Paul. The Minneapolis & St. Louis from St. Paul and Minneapolis, to Des Moines. The Fort Dodge, Des Moines and Southern, an electric line which also does freight business, from Fort Dodge to Des Moines, eighty-six miles. There are seventy-three daily passenger trains in and out of Fort Dodge which carry 698,208 people annually.

Fort Dodge owns its water works plant, valued at \$500,000. A supply of pure water for domestic use is derived from seven artesian wells, which cost for their construction from one to five thousand dollars each. A storage reservoir with a capacity of 2,000,000 gallons, which cost \$30,000. The water plant is equipped with one three million gallon pump, one two million gallon and one extra pump for emergency. This city has thirty-seven miles of water mains, 201 fire hydrants, four fire stations, fifty-five miles of storm and sanitary sewers, 3,000 domestic consumers and pumps 1,000 gallons daily. The city has thirty-six miles of asphalt, concrete and creosote block paving.

Fort Dodge has eighteen churches, a new Methodist church completed last year at a cost of \$150,000, a new Congregational church now nearing completion at a cost of \$65,000, a Y. M. C. A. building costing \$75,000, a Y. W. C. A. building costing \$100,000, two hospitals, one of which cost \$50,000, an opera house, five moving picture theatres, two daily newspapers, three express companies, three strictly modern hotels, the largest of which is The Wahkonsa. An addition to this hotel, recently built, makes it the largest hotel in the state. The present hotel is valued at a total of \$575,000 for the entire structure, exclusive

the civic improvements. The first public play ground was opened in 1913 under expert supervision, and our citizens class it as "another good thing given us by the Woman's Club."

The manufacturers of Fort Dodge stand for high class products and honorable business methods, and the kind of products turned out in addition to the gypsum and clay products which are our principal ones, are overalls, shirts, wool lined coats, gloves, ladies' shoes, harnesses, oatmeal and corn products, gasoline engines, castings, ice cream and dairy products, confectionery, paint, and telephone instruments,



of furnishing; the Fort Dodge Commercial Club occupy the upper floor of the new addition.

Fort Dodge has nine city parks, the largest, Oleson Park, contains sixty-seven acres and was presented to the city by Ex-Senator O. M. Oleson, one of its leading citizens.

Along educational lines, Fort Dodge has a high school and eight grade schools valued at \$500,000; two parochial schools and one German Lutheran school. Fort Dodge has a Carnegie Library costing \$47,000, consisting of 15,000 volumes; 53,000 circulation, a business college and two business schools.

Under the direction of the Woman's Club, play grounds have proven to be a most happy addition to

and many other articles of daily consumption.

In closing this sketch it may be interesting to relate one of the things which has in former years given Fort Dodge more or less publicity but concerning which, at the time, her people were wholly without knowledge: I refer to the petrified body of what was called "The Cardiff Giant" and the history of its discovery. On Saturday forenoon, October 16, 1869, forty-nine years ago, two men were digging a well near the village of Cardiff, Onondaga County, New York. At a depth of about three feet one of the men struck what he supposed was a water lime pipe and asked for an axe with which to break it. The other man went for the axe but before he re-

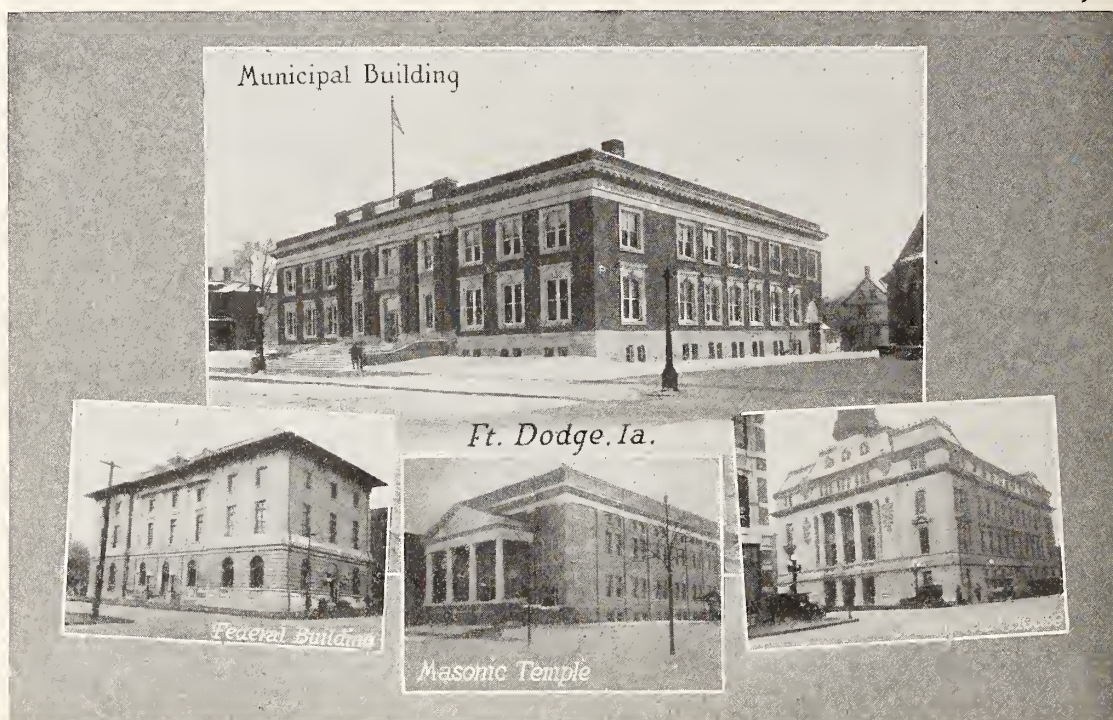
turned the first discovered what appeared to be the foot of a giant man, turned to stone. "I declare some old Indian has been buried here," he said.

The men dug further and finally excavated around the body of what seemed a petrified man. Its height was ten feet seven inches. As may be supposed the discovery created great excitement. People from miles around came to see it. Geologists, naturalists, students came and wondered. Learned professors in universities wrote long articles about it. What was it? Was it a real petrified giant, or was it a hoax? That was the question which set the entire country agog, forty-nine years ago.

lowing all trains to stop over long enough to give passengers a view of the wonder. The giant was one of the best patronized exhibits at the Buffalo exposition.

As a matter of fact, the "giant was a hoax—a colossal hoax."

"In 1868 George Hall of Binghamton, New York, came to Ft. Dodge, where he secured a five-ton block of gypsum. At night with ox teams he hauled the block to Boone and shipped it East. Somewhere, somehow, he fashioned the giant out of the gypsum, buried it where it was found and reaped, not a great fortune, but likely a great amount of amusement."



The Cardiff Giant leaped into fame. History was written about it. Stories about it were eagerly printed by magazines. Practically every up-to-date encyclopedia printed in any language devoted more or less space to it.

Cyrus Cobb, the famous sculptor, saw it and said, any man who declared it a hoax was a fool.

Powers, the sculptor, whose "Greek Slave" made him world famous, said, no chisel could carve such a perfect man. Chief Justice William Ruger of New York and Prof. James Hall, state geologist of New York, believed the giant real. Oliver Wendell Holmes drilled a hole through the back of the giant's head and proved the statue was not a petrified man. He declared it was an ancient image, probably several hundred years old. P. T. Barnum offered \$150,000 for the giant and 6,000,000 people paid 50 cents each to see it. When the giant was on exhibition in Syracuse, New York, the New York Central Railway changed all its train schedules, al-

The Committee on Arrangements wishes to acknowledge its indebtedness to Mr. R. O. Green, Secretary of the Fort Dodge Commercial Club for furnishing this "write up" of the points of interest connected with Fort Dodge and its development as a civic center.

The Fort Dodge Commercial Club through its Secretary, Mr. Green, wishes to extend to the visiting physicians, their wives and friends, the hospitality of the city, and assure all visiting guests of its willingness to cooperate in any means possible to make their stay one of profit and pleasure.

J. N. Warren, Sioux City,
Tom B. Throckmorton, Des Moines,
Thos. F. Duhigg, Des Moines,
J. W. Kime, Fort Dodge.
C. J. Saunders, Fort Dodge,
Committee on Arrangements.

THE OPERATION OF SEWAGE TREATMENT PLANTS IN IOWA*

J. H. DUNLAP, Iowa City

Associate Professor of Hydraulics and Sanitary Engineering,
State University of Iowa

During the past summer the State Board of Health of Iowa employed the writer to inspect water works, sewers, and sewage treatment plants in Iowa. The magnitude of the task may be seen at a glance from the following approximate figures. There are about 2300 cities, towns and villages in Iowa, of which about 450 have a water works system, 182 a sewage system, and 102 a sewage treatment plant. Now of course it was impossible for the writer to make more than a beginning in the inspection of so many plants. Special attention was given to cities and towns having sewage treatment plants, in order that the problems involved in the operation of these plants might be studied and recommendations given. Thirty-nine plants were visited, located in thirty-two different cities and towns. In addition to this, three sewage treatment plants at state institutions were visited.

The common type of sewage treatment plant in Iowa consists of sedimentation tanks, a dosing chamber and intermittent sand beds. The dosing chamber is so designed that it fills with the effluent from the sedimentation tanks. When full, it automatically empties its contents quickly upon a sand bed. When the dosing chamber is again full, it discharges its contents upon another sand bed. This allows the first bed to drain out. While

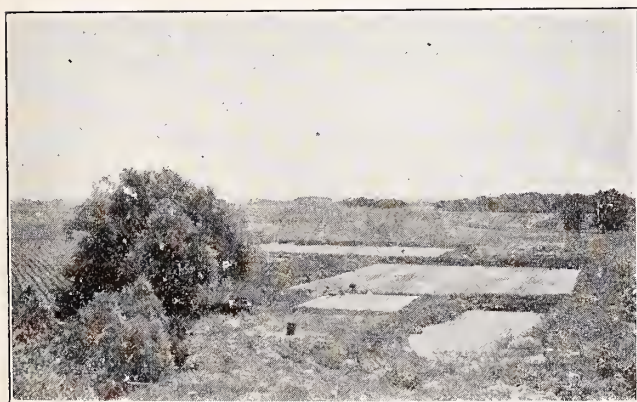


FIGURE 1. Sewage treatment plant at Carroll.

this bed is apparently standing idle, ceaseless activity of bacteria within the bed is oxidizing the organic matter from the sewage into harmless mineral compounds.

The sewage treatment plant at Carroll, Iowa,

shown in figure 1, is a typical Iowa plant. In the middle foreground, just behind the black ash can, are the septic tanks, covered at the time of the visit with a thin growth of grass. The square cement cover of the dosing chamber with two men upon it, is just in rear of the septic tanks. Immediately beyond the square top of the dosing chamber are visible two of the five intermittent sand filters. The other three filters are to the left and at a greater distance from the dosing

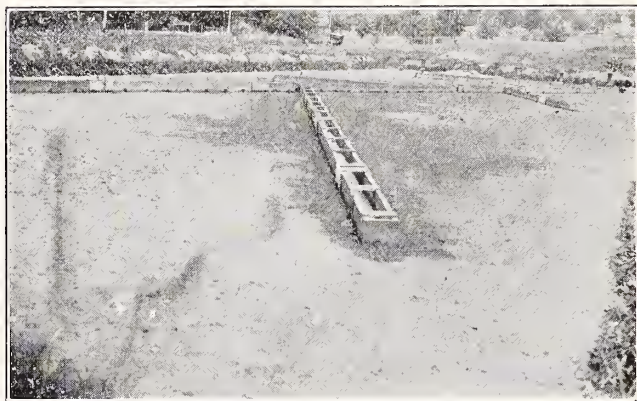


FIGURE 2. One of the intermittent sand filter beds at Mt. Vernon, Iowa.

chamber. At the right foreground is the sludge bed. Some sludge had been pumped out upon this bed. At the time of the visit it was quite dry, as the many cracks over its surface testify.

A close view of one of the sand filter beds at Mt. Vernon, Iowa, is shown in figure 2. Branching plank distributors evenly distribute the sewage over the surface of this bed, which is being maintained in first class condition. At the end of the bed are visible the seven ventilators for the under drains of the bed. It should be noted that in many Iowa plants tile, instead of plank, distributors are used.

Now contrast with these two sewage treatment plants the portion of the plant shown in figure 3. This is supposed to be the photograph of a sand filter bed. Due to the neglect of the bed it has grown up to weeds, and the only evidence of a filter bed visible in the photograph is the plank distributor trough at about the center of the picture. Altogether too many of our Iowa plants are in poor condition, as will be seen presently.

In order to give a birds-eye view of the conditions at the plants visited, the first week's trip will be described. Monday of this first week was spent in the inspection of the sewage treatment plant and water works at a city not over a hundred miles from Des Moines. The sewage treatment plant here consisted of the usual two septic tanks, the dosing chamber, and two intermittent

*Read September 21, 1917, at the Short Course for Health Officers at the State University of Iowa, Iowa City.

sand filters. The sand filters were found to be flooded to a depth of about one foot. When the engineer in charge was told that no oxidation of the organic matter in the sewage would be obtained from constantly flooded filters, he replied that he was leaving the filters in this condition in order that the city council might be convinced that the plant was overworked. This plant has been badly overworked for some time. Instead of two beds, six beds at least are needed. It



FIGURE 3. A neglected sewage treatment plant.

should be said that the engineer hoped to begin the construction of the four additional beds during this summer.

Now why were these two filter beds overloaded? Because more sewage was being applied to them each day than could be taken care of by bacterial action in the sand beds. In other words the organic matter in the sewage reached the bacteria working in the sand faster than they could oxidize it into stable mineral compounds. If properly oxidized, the organic matter, now changed into stable mineral compounds, is carried away in the effluent from the filters and no residue is permanently left within the sand beds. Just as soon as the bacteria are given more work to do than they can accomplish, the organic matter will not be changed over into harmless stable mineral compounds such as will pass away in solution in the effluent from the filter, but will on the contrary begin to fill up the pores in the sand and soon seal the filter so that it is practically water tight. The proper thing to have done in this instance would have been to have sent over upon the filter beds only so much of the sewage as they could properly care for, and to have by-passed the remainder of the sewage directly into the nearby stream. In this way some of the sewage at least would have been put in first class condition, whereas under the other plan none of it would be.

On Tuesday a sewage treatment plant at a town of about 2,500 population was visited. At the time of the visit one filter was found to be flooded, due to the recent high water in the nearby creek backing up so high as to raise the water a foot or so above the sand level. This water had not drained out when the creek subsided, since the surface mat upon the surface of the sand bed had sealed it so that it was practically water tight. The second filter at this plant was being by-passed due to the condition of the first filter. The man in charge of the plant was very sorry to have the plant visited in such a condition, since he prided himself upon keeping the plant in first class shape.

The next day, Wednesday, was spent at a plant of the same type as the others, which was put into operation about April 1, 1916. Both filters were found being by-passed, due to the large amount of infiltration of ground water which had come into the sewers. This had caused such a flood of water that the filters could not care for it. The surfaces of the filters were in bad condition. The plant had received no regular care since it had been put into operation.

Thursday was spent in two cities without sewage treatment plants. On Friday a town of about 1,700 population was visited with a sewage plant similar to the ones previously seen, namely two septic tanks, a dosing chamber, and two intermittent sand filters. The septic tanks were found to be in need of sludging out and both filters were flooded, said to have been caused originally by high water in the nearby creek. The general condition of the plant was sadly neglected. The plant was in charge of the city marshal who had more than he could do without this extra work. Accordingly very little attention was given to it, and such attention as was given was far from being intelligent.

On Saturday a city of nearly 5,000 population, not more than 100 miles from Iowa City, was visited. This city has two plants, the more recent of which is of the same type as those which have been described. At the newer plant the alternating siphons were not alternating properly. The distribution of the sewage over one of the beds, which had been put into use in 1916, was very poor. The second plant at this place was found to be really no plant at all. It consisted of an old septic tank from which the effluent was run into a natural depression holding a pond about 200 feet in diameter. It is supposed that originally it was thought that the sewage would settle down through the sandy soil at this point. This had not proved to be the case, however, as

might be expected from what we know now about sewage treatment. The net result of this plant was an effluent which was dark in color and in a septic, putrescent condition after passing through this sewage pond.

Now it will be noticed that six plants were visited during this first week and that none of them was found to be in first class condition. Of the thirty-nine Iowa plants visited during the summer, only three can be said to have been in good condition. All three of these plants had features which were needing immediate attention, but in general they were giving excellent results. The other thirty-six plants were either not being operated properly or were so badly overworked as to make first-class operation impossible.

Now what can be done to correct such conditions as these? Only one alternative is open,—either the towns themselves must properly operate their sewage treatment plants or the state must supervise their operation for the towns. At the present time the appropriations available for the work of the State Board of Health prohibit any adequate supervision of the sewage treatment plants of the state. It is a marvel to the writer that so much is accomplished by the State Board of Health of Iowa with the small amount of funds which it has available. Just as regularly as the interests of the State Board of Health and the interests of the hog raising industry of the state come into conflict at the legislature in Des Moines, the hogs seem to win out. The reasons why this is the case are quite obvious. Accordingly until such time as the State Board of Health has sufficient support so that it can regularly visit the sewage treatment plants and supervise their operation, only one answer can be given to the question of what we are going to do about the present condition of affairs; and that answer is that some one individual in each town and city having a sewage treatment plant must interest himself in this plant and see to it that a man is placed in charge who is faithful enough and intelligent enough to study out the physical construction of the plant, the biological processes involved in sewage treatment, and the remedies for the troubles which will need correction from time to time throughout the year. If no local man can be found who can take full charge, then an expert from outside should be engaged to supervise the operation of the plant. At relatively small expense, good results can be secured in this way. The small expense involved is in reality a saving if the future cost of present neglect is taken into account. One competent sanitary engineer could be engaged for this work by several

towns. The expert might place a local man in direct charge and himself supervise the operation of the plant by making an occasional visit to it at the critical times of the year.

Now the health officers of our cities and towns are very busy men. Their first duty is of course the control of preventable diseases in their communities. This is naturally more than enough to occupy all spare time available. On the other hand the health officer, if he be a physician as is commonly the case, is probably the only man in town who has ever studied the subject of sewage treatment at all. At present in our medical schools considerable attention is being given to the subject of purification of water and treatment of sewage. Men who graduate from these schools and are later appointed as health officers of their communities, are probably in a better position than any one else in the community to see to it that the right man is placed in charge of the sewage treatment plant, and that he secures results which will safeguard the health of communities farther down the water course into which the effluent from the sewage plant comes, and which will furthermore safeguard the city from the legal complications that are almost sure to arise in case the plant is not operated properly for a long enough period.

Accordingly it may be of value to review very briefly here in this short course for health officers some of the essential features of operation of the most common type of sewage treatment plant in Iowa. As has been said, the usual plant consists of settling tanks, the effluent from which is intermittently discharged upon the surface of sand filters. First, the question may be asked, "Why are two processes necessary—first some form of settling tank and then some form of so-called filter? Why will not a settling tank be sufficient by itself, and why will not the filter be adequate by itself?" In answering these questions the nature of average sewage must be kept in mind. Average American residential sewage contains about 200 to 800 parts per 1,000,000 of solids. On the average, therefore 500 parts per 1,000,000, or 0.5 of a part per 1,000, are solids. In other words, in every hundred parts of sewage 99.95 parts are water. About $\frac{1}{2}$ of $\frac{1}{10}$ of one per cent. is solid matter. About one-half of this small amount of solid matter is mineral, and the other one-half, organic. Of course it is this small amount of organic matter for which the sewage treatment plant is primarily designed. Of the total solids about one-third is in suspension, and about two-thirds in solution. In removing a part of these suspended matters, two methods

are in common use in this country, screening and sedimentation in settling tanks. In Iowa only coarse screening is now in use and very little of that. Quite generally in Iowa, settling tanks are relied upon to remove about 65 per cent. of these suspended solids. Incidentally this will remove about 30 per cent. of the total organic matter. Under Iowa conditions the remaining 70 per cent. of the organic matter will require subsequent treatment in order to avoid nuisance to sight and smell.

Two general types of sedimentation tanks are used in this state—the old Cameron septic tank, and now in these later days, the Imhoff tank. In the Cameron septic tanks the suspended mineral and organic matter, which is finally settled to the bottom, undergoes bacterial action which consists principally in the liquefaction of some of the solids. The remainder of the solids are left in the tank and present a serious problem in the operation of a sewage treatment plant. This large accumulation in the bottom of these tanks ought to be removed at least twice a year—in the spring and in the fall. Of course the septic tanks should be so designed by the designing engineer that the removal of this sludge may be easily accomplished. Many of the tanks seen this summer were too full of sludge. Some tanks were found completely filled with sludge.

There are three very objectionable features to septic tanks, so-called. First, the sewage must be left in them for an average flowing-through period of six to eight hours. Because of this the sewage flows out of the tank more stale than it was when it came in, and is therefore injured somewhat for subsequent treatment upon sand beds. Second, the sludge in the bottom of the tank is in a septic condition. When discharged upon sludge beds it gives off objectionable odors. It contains, in all probability, disease producing bacteria. Third, the sludge at the bottom as it ferments becomes gas filled and in rising to the surface mixes with the sewage flowing through the tank, which interferes with the process of sedimentation.

Now the Imhoff tank is designed to do away with these three objections. The tank is made in two compartments, the upper compartment being a sedimentation chamber through which the sewage flows. While the sewage is flowing through this chamber in a period of from one and one-half to three hours, the suspended matters settle to the bottom upon sloping aprons which are so built as to trap off the sludge chamber beneath from the sedimentation chamber above. The suspended solids as they settle down upon these aprons at the bottom of the sedimentation chamber, work

down through a slot and trap, and fall into the sludge or digestion chamber beneath. They then settle down to the bottom, a distance of usually about twenty-five or thirty feet below the surface of the sewage. Here they undergo bacterial action without disturbance from incoming fresh sewage. As the gases of decomposition rise, they are trapped off from entering the sedimentation chamber and pass out through gas vents. By this means a good fresh effluent is secured from the tank, since the sewage remains in the sedimentation chamber only one and one-half to three hours as against six to eight hours in a septic tank. Furthermore the sludge from the Imhoff tanks, when run out upon sludge beds, is wholly inoffensive and does not contain disease producing bacteria.

None of the Imhoff tanks which the author visited during the summer was being properly maintained. These tanks should be built so that all parts of them may be reached easily and kept in proper working condition. The slopes in the sedimentation chamber, and the slot and trap at the bottom of it must be kept free from sludge. If this is done, practically no scum will rise to the surface of the sewage in the sedimentation chamber. The scum which forms in the gas vents must be kept broken up and as far as possible caused to resettle. The maintenance of these tanks requires the attention of an intelligent and faithful attendant in some cases as often as every day. In other plants weekly or monthly attention will prove sufficient. No Imhoff tank, however, will operate successfully without constant and intelligent care.

In nearly all cases in Iowa because of the organic matter remaining in the sewage after passing through the settling tanks, it is necessary to treat the effluent further. This is done in the common type of plant now under consideration by discharging it intermittently upon the surface of sand filters. The term "filter" for these sand beds is somewhat misleading. While these beds do act as splendid strainers, yet their most important function is the bacterial action which goes on within the beds and particularly near the surface. By this bacterial action the organic matter coming upon these filters is so oxidized by the bacteria as to be suitable for discharge into an open ditch without nuisance, when the filters are operating properly. Now in the operation of these sand filters care must be taken that the air always has access to the interior of the filter. The greatest activity of the bacteria is in the few inches at the surface of the filter. This must be kept open. Of course the surface

of the filter must not be clogged with too much water or with too much organic matter. Ordinarily in Iowa about 2,000 people can be cared for upon one acre of sewage filter. In many places two to three times this number are being cared for upon filters after some sort of fashion, but not in a satisfactory manner. The surface of the beds must be kept level in order that the sewage may cover them to an even depth as it is flooded upon them from the dosing chamber. The distributors upon the surface of the sewage bed must be so arranged that equal amounts of sewage are discharged over all parts of the bed.

Attention to these details requires constant service at the plant. Ideally, every plant should be visited daily. No plant should be allowed to go longer than a week at a time without a visit and a careful inspection of the processes going on. Of course the vegetable growth upon the surface of the filters becomes very rank unless they are kept free from it. No weeds or roots should be allowed to accumulate, or the interstices between the sand grains will become clogged and the efficiency of the filter impaired. From time to time the surface of the sand filter will become clogged so that the sewage pools slightly. Frequently this condition may be remedied by raking the surface to a depth of one-half inch with an ordinary rake, or harrowing it with a harrow whose teeth strike in only one-half inch. Such sand filters should never be plowed. In some places in Iowa this has been tried, as indeed has also spading the filters. By turning this organic matter at the surface of the filter underneath to a depth of five to eight inches the bed is almost sure to become completely sealed, since the organic matter cannot be worked over efficiently when so deep in the sand bed. When raking does not suffice to keep the surface open, then in all probability a surface mat has been formed thick enough so that it should be removed from the filter. Ordinarily not over one inch of sand will have to be removed from the filter in one year.

During the winter it will be found helpful to provide some form of supports over the filter surface for the ice which is almost sure to form in this climate. Two methods of doing this are in use. The one most commonly used hitherto in Iowa has been the ridge-and-furrow method. In the East a more common method is to give the beds a good cleaning just before freezing weather sets in in the fall. The mat which is raked together, is then left in piles eight or ten inches high, and a few feet apart over the surface of the bed. When the ice forms, there will remain around each one of these piles small channels

through which the sewage may flow and find its way over the surface of the beds. In the spring it is much easier to put such beds back into normal operation than it is to re-level and properly clean beds which have been operated by the ridge-and-furrow method.

It is impossible in the time allowed, to go into many of the details of the operation of sewage treatment plants. No time is available to describe the other types of plants in use in this state. It is hoped that enough has been said to make plain four facts. First, the condition of the sewage treatment plants in Iowa is by no means what it ought to be. Second, in the common type of plant which is being used for the small towns and cities of Iowa, settling tanks are employed to remove about 30 per cent. of the organic matter, and intermittent sand filters are used to oxidize the remaining 70 per cent. of the organic matter so that a stable effluent is secured. Third, both the settling tanks and the filters, together with the dosing chamber necessary for the intermittent discharge, require continual, faithful, intelligent care by someone who is capable of understanding the biological principles which are involved in the oxidation of organic matter. Fourth, it should be evident from the nature of the delicate processes that go on in a sewage treatment plant that only competent engineering service should be secured when the plant is designed and built. City councils in asking different sanitary engineers to make proposals for the design and construction of sewage treatment plants, too often lean favorably toward the engineer who names a low price. It is needless to say that a plant which is not properly designed and constructed in the first place, cannot be operated properly.

ACIDOSIS IN CHILDREN*

FRED MOORE, M.D., Des Moines

In clinical medicine the term "acidosis" has been loosely applied to various conditions. The most common reason for the diagnosis has been the presence of "acetone bodies" (acetone, diacetic acid, beta-oxybutyric acid) in the urine. An increase in ammonia content of the urine has also been accepted as indication of increased acidity, the ammonia being produced as a neutralizing substance. Various gastro-intestinal disturbances have been diagnosed "intoxication" which has often been held synonymous with acidosis. As a result we have had a heterogenous lot of cases under this title.

*Read before the Sixty-sixth annual session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1917.

Clinical observation and laboratory study have shown that acetonuria is a common occurrence in sick children regardless of the nature of the illness. It is usually present in acute infections and is so common in all nutritional disturbances of children that it has no diagnostic value. Very small amounts are present in the blood and urine of normal children.^{1 2 3 4 5} A moderate increase of these has no clinical significance. They may be so greatly increased however that the condition is one of true acidosis and incompatible with life. The acetone content of the blood in an acetone acidosis is enormously greater than that in the blood of the patients with ordinary acetonuria.

In connection with acetonuria I wish to state that whenever acetone is present in the urine, diacetic acid is also present. It is present in greater quantity than acetone. Formerly we have thought that acetone occurred alone because of a positive sodium nitroprusside reaction and a negative ferric chloride test. Sodium nitroprusside reacts to diacetic acid as well as to acetone. It is ten times more delicate for diacetic acid than for acetone. It is twenty times more delicate than ferric chloride. These two tests give rough quantitative expressions of diacetic acid rather than a differential between acetone and diacetic.

A high ammonia coefficient in the urine may occur in nutritional disturbances without acidosis. Alone it is insufficient evidence for diagnosis.

The present conception of acidosis is based upon a disturbance of the normal proportion between acid and basic substances in the tissues. This normal relation is often expressed as the "acid-base equilibrium." Increased acidity may result from an actual increase of acid substances, or it may be only relatively increased from a loss of bases. An actual increase of acid substance means an increased concentration of the H-ions. This usually is accompanied by a definite physical sign—increased respiration.—This is a sign of acid poisoning. Czerny⁶ in 1887 called attention to the altered respiration in rabbits poisoned by mineral acids, and noted the resemblance to the respiration observed in infants with severe diarrhoea. Acidosis has been demonstrated in patients whose blood serum showed a decrease of alkali, the actual acidity, as measured by H-ion

concentration, being normal.⁷ The acid condition in such a case is of course purely relative, but the same clinical sign, hypernea, is present.

In an effort to get closer to the metabolic factors, studies of the urine have been put aside for analysis of the blood and the expired air—usually called "alveolar air." Examination of the blood serum for H-ion concentration and alkali content, have been much simplified by methods introduced within the last two years.^{8 9} While these examinations are essentially laboratory rather than clinical, still they are neither difficult nor time consuming.

The most valuable and simplest examination available in the diagnosis is that which determines the amount of carbon dioxide in the alveolar air. The amount present is expressed as its tension in mm. of mercury. Normally this varies from 40 to 45 mm. in adults. In infants it runs from 3 to 5 mm. less. If abnormal acids are present in the blood, they combine with the bicarbonate of soda of the blood and displace a proportionate amount of carbon dioxide, and as the carbon dioxide tension in the alveolar air bears a direct relation to that in the blood, it is evident that the amount in the alveolar air will fall likewise. Therefore a low carbon dioxide tension indicates acidosis. The carbon dioxide tension also gives direct evidence concerning the severity of the acidosis and enables one to follow the results of treatment. "The determination may be completed in a few minutes time with no especial discomfort to the patient. Two procedures are involved—the collection of the alveolar air, and the analysis of the sample."¹⁰

I have spoken of acid-base equilibrium. Normally there is a continual production, neutralization, and elimination of acid substance. John Howland¹¹ has described this well—"With extraordinary regularity the blood is maintained at a constant reaction which is alkaline. It is unnecessary to dwell upon the necessity for constancy of reaction further than to remind you of the extreme sensitiveness of the enzyme and chemical actions in the body, which are interfered with or absolutely inhibited by the most minute alterations of reaction in the various fluids. For instance, a change in the reaction of the blood from the normal one to precise neutrality is sufficient to render life impossible. That is, a change from the reaction of ordinary tap

1. Langstein and Meyer—Jahrb F. Kindh, 1905, vol. lxi, p. 438.

2. Leifman—Jahrb F. Kindh, 1913, vol. xi, p. 291.

3. Marriott—Jour. Biol. Chem., 1913, vol. xvi, p. 293, Ibid, vol. xviii.

4. Veeder and Johnston—Amer. Jour. Dis. Children, vol. xi, p. 281.

5. Moore—Amer. Jour. Dis. Children, vol. xii, p. 244.

6. Czerny—Jahrb F. Kindheilck, 1897, vol. xlv, p. 271.

7. Marriott—Arch. Int., June, 1916.

8. Sellards—Johns Hopkins Hosp. Bull., 1914, vol. xxv, p. 389.

9. Levy, Rowntree, Marriott—Arch. Int. Med., 1915, vol. xvi, p. 389.

10. Marriott—Jour. A. M. A., 1916, vol. lxvi, pp. 1594-1596.

11. Howland and Merriott—Johns Hopkins Hosp., B. 1916, vol. xvii.

water which is more alkaline than the blood, to that of distilled water, which is much more acid than blood, would be incompatible with life.

"The body is constantly elaborating acids as the result of oxidative processes in metabolism. For example, sulphuric and phosphoric acids result from the oxidation of the sulphur and phosphorus of proteins, and carbonic acid from the transformation of all organic material. In addition, certain organic acids are formed,—and there are acid radicles in mineral constituents of many common foods. The carbonic acid alone excreted by an adult in the course of a day is the chemical equivalent of several hundred cubic centimeters of concentrated hydrochloric acid." The carbonic acid is carried to the lungs in loose combination with the bicarbonate of soda of the blood where it is excreted and the bicarbonate is retained. When the acid content of the blood is increased, the bicarbonate of soda is chemically bound and the capacity of the blood to carry carbon dioxide is reduced. This explains the decreased amount of carbon dioxide in the blood and alveolar air in acidosis. Since less of it is available for excretion at a given time, the respirations are increased in rate and depth in order to compensate in the removal of carbon dioxide. The sodium salt of the acid present is excreted by the kidneys. This means a loss of alkali and consequent disturbance of acid base equilibrium. It is apparent then that bicarbonate of soda normally present in the blood constitutes an important protection against acid accumulation. Under normal conditions it facilitates removal of carbon dioxide without loss of alkali. In acidosis it facilitates the removal of the acid as a sodium salt via the kidneys but at this time there is a loss of alkali.

A second means of defense is the kidney. Normal urine is usually acid in reaction. This is due to acid phosphates. The selective action of the kidney enables it to excrete an acid urine from a slightly alkaline blood. This is accomplished by elimination of the acid sodium phosphate, leaving the alkaline sodium phosphate in the blood.

Another measure of defense is neutralization of acid by ammonia. This is formed chiefly from urea, and coming from a waste product, represents a pure gain to the body—a saving of so much alkali.

The fourth method of defense is the power of proteins to combine with appreciable amounts of alkali or acid without undergoing great changes in reaction.

Thus it becomes apparent that the condition

of acidosis depends upon production, neutralization and elimination—*i. e.*,—if an excess of acid is produced in the blood and the defenses are sufficient to keep the reaction of the blood and the tissues within certain limits, then there will be no clinical manifestation of acidosis. Let the production increase, or neutralizing or eliminating powers fail, and acids will accumulate rapidly. This condition usually occurs in the course of some other disease. Apparently no field of clinical medicine is exempt. It may be an important factor in eclampsia. The surgeon meets with it as a post-operative complication. It occurs in the course of acute infections. Acidosis in diabetes was the first recognized. It may be an important factor in cardiorenal cases. In children I have seen it in diarrhea, pneumonia, diabetes, recurrent vomiting, ileo-colitis, and in two instances in which the primary illness was not determined.

The diagnosis is made by a study of the respiration. Lowered carbon dioxide tension of alveolar air is the earliest accurate sign. A decrease of five to ten millimeters indicates a moderate degree of acidosis. The tension may fall as low as ten to fifteen mm. I have mentioned the stimulating effect of acids on the respiratory center. In well developed acidosis the hyperpnœa is often sufficient evidence for diagnosis. This is particularly true in severe cases of diarrhea in infants. Marked cases present signs of definite air hunger, but no cyanosis. Respiration is increased in rate. Inspiration and expiration are about equal in length. They are deep, heaving, and without pause—the latter fact being very significant. In children there is marked costal excursion as well as abdominal movement. As a rule hyperpnœa means acidosis.

The alkali tolerance of the patient has been advocated as a diagnostic measure.¹² This determines how much bicarbonate of soda is required to render the urine alkaline. It has been established that in a normal infant 30 to 60 grains by mouth will render the urine alkaline for a few hours. In adults 90 to 180 grains are required. If more than this is necessary, it is an indication that the alkali reserve of the tissues is below normal, *i. e.*, an excess of acid is present and has neutralized part of the normal alkali reserve in the blood. The disadvantages of this method are obvious. The determination of carbon dioxide tension is a most satisfactory diagnostic procedure because it is simple, gives early evidence, and is accurate.

In some cases blood analysis has shown the

12. Sellards—*Johns Hop. Hosp. Bull.*, 1914, vol. xxv, p. 389.

condition to be an accumulation of acetone bodies. In infants and diarrhea this is not often the case. I have studied a number of cases of marked acidosis, especially in diarrhea, in which there was no increase in acetone bodies in either blood or urine. We were unable to determine the kind of acid present in these cases. In any event we have to deal with the result of some secondary process, and the condition must be treated as a symptom. As hyperpyrexia may demand active treatment to conserve life, so may acidosis demand attention. Its correction does not remove the cause of the disease.

The treatment consists in conservation of the normal defenses of the body and the administration of alkali. It is important to give an abundance of liquids—prevent any cessation of renal activity. Bicarbonate of soda is the most available and a very satisfactory alkali. The greatly increased output of acetone bodies after alkali therapy in diabetic acidosis is well known. The administration of bicarbonate of soda is usually followed by increased carbon dioxide tension in blood and alveolar air, and respiration may become normal. It may be given by mouth in 2 to 5 per cent. solution, by rectum in 10 per cent. solution, by subcutaneous injection in 2 per cent. solution, or intravenous injection in 2 to 4 per cent. solution. If mixed in ice water large doses may be given by mouth without gastric disturbance. Enough should be given to render the urine alkaline. It has been noted that practically the same quantity required to render the urine alkaline will restore normal carbon dioxide tension. The same may be used as a prophylactic measure but if used in this manner, it must not be used to excess. Too much soda may of itself produce vomiting and diarrhea. In cases due to acetone bodies without sugar in the urine, glucose is clearly indicated in addition to alkali. Acetone bodies are derived chiefly from fats. For proper oxidation of fats, carbohydrates are required. Therefore, it appears rational to furnish carbohydrates in acetone acidosis in cases other than diabetes.

The prognosis is bad. In older children alkali therapy brings relief more quickly, and permanent recovery is more likely. In the majority of cases of infants with severe diarrhea, they die of malnutrition even though the acidosis may be relieved. It is to be hoped that experience will develop a better feeding therapy for them. Formerly death usually occurred in a state of acidosis—cutting off opportunity for development of rational feeding, based upon their deranged metabolism.

I shall describe briefly the various types of acidosis that I have observed in children.

A. Acetone acidosis:

1. *Diabetes*—I have had opportunity to study the metabolism in two cases of diabetes simultaneously. Both were boys, one three years of age, the other eight. Both exhibited mild acidosis upon admission to the hospital and both had increased acetone bodies in the blood. They demonstrated that one cannot estimate the blood condition from the urine. Their diets differed only in quantity. The acetone bodies in the blood of one was three times greater than in the other, but the one with the higher blood acetone was actually excreting less acid substance. One would expect that patient to be better whose blood, rather than urine, showed the lesser acid condition and this was true, showing the fallacy of judging the patient by the amount of acid in the urine. As Magnus Levy has stated, it is the acid that is retained, not that which is excreted that does the harm. In severe acidosis of diabetes, the blood contains large amounts of acetone bodies.

2. *Periodic, recurrent, or Cyclic Vomiting is an Acetone Acidosis*—Numerous theories of etiology have been offered, but none proved. It occurs in children from two to twelve years of age. Without apparent reason they have vomiting attacks at intervals varying from a few weeks to several months. The attacks come on suddenly; the vomiting is severe, frequent and prolonged—twenty-four to forty-eight hours; the thirst is unquenchable; the temperature normal, or but slightly elevated. Both the urine and the blood show enormous quantities of acetone bodies immediately after onset. Between attacks there is no acetonuria. The prognosis is usually good. It may stop as suddenly as it started. This may come on during other illness. There is no specific treatment.

A girl of six years had been seen in such an attack some months before she became ill with measles. In the latter illness, on the third day after eruption she vomited repeatedly and severely. When I saw her she had a temperature of 100, pulse 140, respiration about 50 per minute. Respiratory movements were deep, heaving, and pauseless, quite unlike the respiration which characterizes a beginning pneumonia. There was some bronchitis. There was no cyanosis and the child did not appear so ill as in a case of measles complicated by pneumonia. The diagnosis of acidosis was based upon the character of the respiration. About 12 grams of bicarbonate of soda were given within three hours. Her respiration fell to thirty per minute; she slept all night; and in the

morning she was quite like the ordinary cases of measles at this stage. The urine at this time gave very marked ferric chloride reaction for diacetic acid.

Fatalities in recurrent vomiting are rare.

3. I have studied twenty cases of diarrhea in infants and found one case of ileo-colitis with an acetone acidosis.

Walter W. was a two year old boy whose whole history had been one of difficult feeding. All his gastrointestinal disturbances had been characterized by vomiting and diarrhea. He was brought to the hospital in such an attack. Clinically he showed the abnormal respiration. He was alternately irritable and drowsy. His stools were large, loose, frequent—contained much mucus and some blood. Laboratory tests corroborated the clinical diagnosis of acidosis. He was treated with alkali. The symptoms of acidosis disappeared. He improved for one week—then pneumonia developed—which terminated fatally.

4. I have seen one acetone acidosis occurring spontaneously in a case of malignancy.

A boy of three and one-half years was brought for observation on account of a tumor in the antrum of Highmore. Examination revealed an inoperable tumor of the kidney region, probably the primary growth. His condition was not unusual until one evening it was noticed that he was breathing heavily. The next day his dyspnea was marked. He sat up in bed in distress. The respirations were rapid, deep, heaving and regular. There was no cyanosis. Acidosis was diagnosed clinically, and confirmed by laboratory findings. He was given 7 grams bicarbonate of soda intravenously. Before 2 grams had been injected, a marked improvement was noticed. Within a half hour after the injection was completed, he was breathing quietly, and had fallen asleep. Quantitative analysis of urine yielded large amounts of acetone bodies. Four weeks later dyspnea again developed and was promptly stopped by use of alkali.

B. Acidosis not due to acetone bodies.

L. In acute infections.

1. A child of two years had been ill several days with pneumonia. He had a temperature of 105 and was comatose. Respirations were sufficiently altered from the characteristic type to suggest acidosis. Laboratory tests revealed decreased carbon dioxide tension, increased acidity of the blood but no increase of blood acetone. Renal activity was greatly suppressed, 35 cc. of urine being excreted in eight hours. Bicarbonate of soda was given intravenously but there was no improvement. Death occurred twenty-four hours after admission to the hospital.

2. One case of acidosis—not acetone—was observed in a boy of six years of age in whom the only specific finding was an acute otitis media. He was

brought to the hospital at 9:00 P. M. in semi-comatose condition with temperature of 104. The only physical findings were stupor, otitis-media, febrile reaction, and altered respiration. Ten grams bicarbonate of soda were administered by stomach tube and by rectum within three hours. There was immediate improvement in general condition, although this was not enough soda to render the urine alkaline. On the following morning he appeared to be all right except for a slight purulent discharge from the ear.

3. The type of acidosis most often seen in infants is that which complicates diarrhea. Repeated examinations of blood and urine in such cases have shown that it is not due to acetone bodies. On account of the usual anuria, Howland has suggested the retention of phosphate since the kidney normally excretes much acid phosphate. When acidosis occurs it is usually, but not always, in infants who have had previous gastrointestinal disturbances. They usually exhibit somnolence, stupor or even coma, moderate fever, vomiting, diarrhea, rapid loss of weight, grayish color, almost complete anuria, and disturbed respiration. Unexpected collapse is often a terminal event. The tendency to anuria in cases of diarrhea should excite suspicion of beginning acidosis. Deep, regular, and pauseless breathing is a clinical confirmation.

The following case, a baby three months of age, reported by Howland, is typical of the condition:¹³ He was moderately developed and nourished, but showed evidence of recent loss of weight. The skin was loose, hot and dry, and his lips parched. His fontanelle was depressed. His respirations were deep, heaving, pauseless and were accomplished with distinct effort. His heart tones were of poor quality. His liver was enlarged. He lay usually in a semi-stupor, but when aroused, was very irritable and cried with a shrill, distressed cry. His white cells were 15,000. His temperature was between 99 and 101 F. His stools were large and consisted only of a brown and watery fluid. The laboratory tests revealed very marked acidity of the blood but showed no increase of acetone bodies. Despite the administration of alkali, by mouth and subcutaneously, he died eight hours after admission to the hospital.

As already stated, these cases are usually fatal even though the acidosis may be overcome. Whether abnormal processes have been initiated or whether normal ones have been inhibited beyond recall is not yet known. However, the condition has been amply demonstrated as a true acidosis and at present we must deal with it as such.

13. Howland and Merriott—*Amer. Jour. Dis. Ch.*, 1916, vol. xi, p. 309.

CONCLUSIONS

1. The present conception of acidosis is based upon a disturbance of the normal acid—base equilibrium of the tissues.
2. Urinalysis does not offer sufficient evidence for diagnosis.
3. Clinical diagnosis is made by observation of hyperpnœa. This should be confirmed by the determination of carbon dioxide tension of the alveolar air.
4. The prognosis is bad, especially in infants.
5. The preventive treatment consists of conservation of the natural defenses of the body against accumulation of acids. Once developed the indications are for use of alkali therapy.
6. Acidosis in infants with diarrhea is usually not due to acetone bodies—although they may be the cause of acidosis in other conditions.

ACIDOSIS IN SURGERY*

EVARTS A. GRAHAM, M.D., F.A.C.S.,
(Park Hospital, Mason City)

Modern operative technique has advanced to the point where now in the majority of cases the degree of risk which a patient takes in undergoing an operation can be foretold with a fair degree of accuracy. Every surgeon, however, meets with exceptional cases which unexpectedly do badly or die, often with no apparent reason. A desire to make our results as nearly perfect as possible will compel us to consider every possible danger and pit-fall. We must include in all such considerations the insidious menace of a severe acidosis. It will be the purpose of this paper to discuss briefly certain points illustrative of how acidosis occurs and varies in certain surgical conditions, its recognition, methods of its prevention and treatment. Because of limitations of time, these points can be discussed only in rather general terms.

The term "acidosis" was first used by Naunyn with reference to the flooding of the body with acids in diabetes. The acid considered to be the principal offender was beta-oxybutyric acid. More recently, however, the term has had a much broader application and has been used with reference to any conditions which present an excessive acid formation or accumulation without regard necessarily to diabetes and beta-oxybutyric acid. The excessive acid production or accumulation becomes apparent whenever there is a disturbance in favor of the acid side of the approxi-

mate equilibrium which exists in the body between acid and alkali. Therefore, the condition of so-called acidosis may theoretically be possible not only when there is an actual increase in acid production and accumulation but also when because of a low alkali reserve, there is a deficient power of the body to neutralize or eliminate acid substances formed in normal amounts. The broadening of the conception of the term has been made necessary through the discovery that many other conditions than diabetes are associated with an abnormally high acid production. For example, as long ago as 1893, J. Loeb¹ found that whenever the oxygen supply of a tissue became insufficient, that tissue became acid in reaction. Through the work of Verworn,² Mansfeld,³ Mathews⁴, and others, we have learned that always during narcosis there is an actual demonstrable lack of sufficient oxygen on the part of the tissues, a tissue asphyxia, regardless of the frequency or depth of the respirations. Coupling this finding with the earlier one of Loeb's that tissue asphyxia always also implies tissue acidity, we are not surprised to find that a constant accompaniment of a general anesthesia is an increase in the acid content of the body. The conclusion of Crile and some others, however, that narcosis is simply a tissue asphyxia, has no real evidence to support it. Other conditions also are more or less constantly accompanied by an increase in the acid content of the body. For example, the withholding of food, even if for only twelve hours, has been shown to result in the production of abnormally large amounts of B-oxybutyric and other organic acids. Severe infections in general are also accompanied by an increased acid content.

Since the body requires a normal balance between acid and alkali for the performance of its various functions, it is evident that any excessive accumulation of acid will lead to more or less disastrous results. More and more alkali, either in the form of ammonia or the fixed alkalies drawn from the bones and other sources, will be required to neutralize the acid; and if the amount of acid be great enough, the body will be unable to neutralize it and death will occur from interference with the normal functions as a result of the acid intoxication. Various effects become evident; but in any given case they are not necessarily all present. Disturbances in the respiration appear, either as a simple increase in the rate or the occurrence of a Cheyne-Stokes type. The

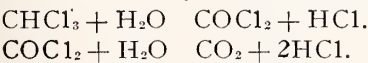
*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1917.

1. Arch. f. ges. Physiol, 1898, vol. lxxi, p. 457.
2. "Allgemeine Physiologie," Jena, 1915, G. Fisher.
3. Pflüger's Archiv., 1910, vol. cxxxi, p. 464.
4. Jour. Pharm. and Exper. Therap., 1911, vol. ii, p. 231.

urine shows an increased amount of ammonia excretion, various products of incomplete oxidation of fats and sugars, such as aceto-acetic acid, acetone, lactic and other acids, together with definite evidence of serious damage to kidney function as shown by the appearance of albumen, casts, etc. Especially interesting is the fact that at autopsy a definite syndrome of anatomical changes is nearly constantly found in the viscera. These consist of a tendency to the production of hemorrhages, edema, fatty degenerative changes (probably as a result of a failure to oxidize sugar) and actual necrosis.

That this pathological syndrome of actual structural changes in the tissues is an effect of acid intoxication is shown clearly by experiments which have been carried out by the author during the course of an investigation of some of the fundamental properties of the common anesthetic substances. It has, of course, been known that chloroform is more toxic than ether or nitrous oxide; and it is of course also an old observation that if chloroform be administered for two or three hours consecutively, a condition, often fatal, results, which is known as "late chloroform poisoning" because the symptoms manifest themselves most conspicuously from twenty-four to forty-eight hours after the administration of the drug. This condition is characterized at autopsy by the presence of the syndrome just described, viz., edema, a tendency to hemorrhage, fatty degenerative changes (especially in the liver) and necrosis. Some of the evidence⁵ favoring the view that these changes are acid effects may be briefly summarized as follows:

1. Outside of the body one molecule of chloroform in the presence of oxygen and water is capable of yielding three molecules of hydrochloric acid. This reaction may be expressed thus:



That the same decomposition of chloroform into hydrochloric acid occurs within the body (where of course available oxygen and water are also present) seems indicated by the following observations:

2. Hydrochloric acid when injected into a radicle of the portal vein of an animal in suitable concentrations, induces a fairly typical "chloroform liver."

3. By means of suitable reagents it is possible to demonstrate in fresh, surviving chloroform livers, free hydrogen ion and free chlorine ion, a fact which strongly indicates the presence of free hydrochloric acid.

4. After the administration of chloroform there

appears in the urine an excessive amount of the neutral salts of hydrochloric acid. Similarly, after the administration of the analogous substances, bromoform (CHBr₃) and iodoform (CHI₃), the neutral salts of hydrobromic and hydriodic acids appear in the urine, showing conclusively that at least these analogues of chloroform are split up in such a way as to yield their corresponding halogen acids.

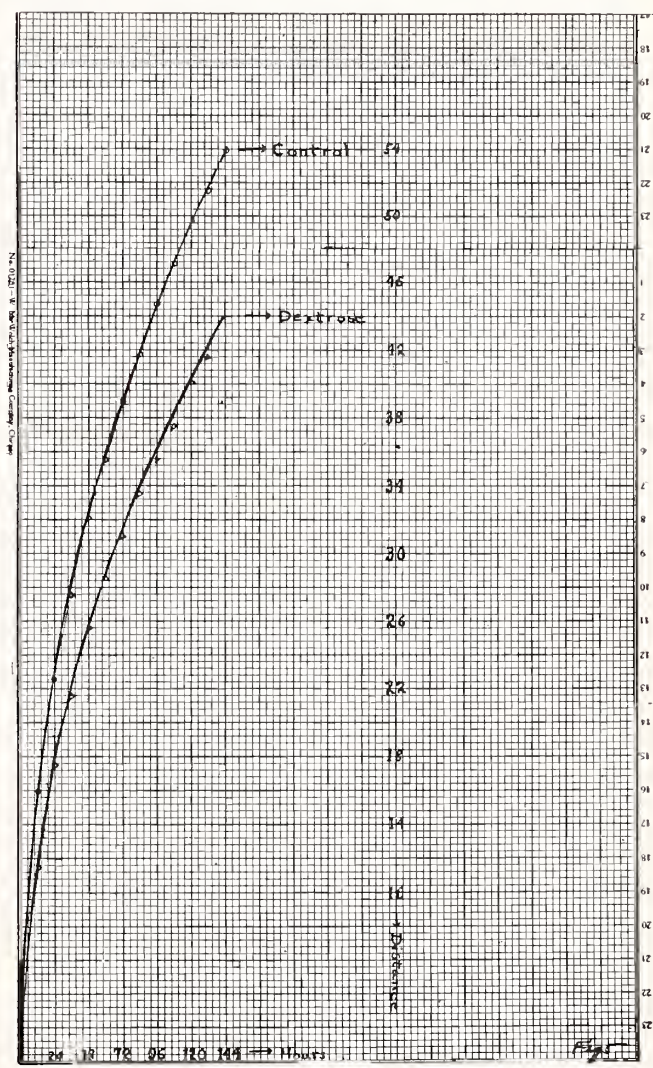


FIGURE 5—Inhibition of diffusion of hydrochloric acid by dextrose. The curves show the distances to which N—5 hydrochloric acid diffuses through 10 per cent. gelatin tubes with M—2 dextrose and with no dextrose. The distances are expressed in millimeters. The temperature was 26° C.

5. Alkali in suitable concentration inhibits the production of the typical lesions of chloroform poisoning.

6. Other chlorine substitution products of methane are toxic roughly in proportion to the number of molecules of hydrochloric acid which they can yield theoretically in their breakdown. Thus, carbon tetrachloride, (CCl₄), which theoretically can yield four molecules of hydrochloric acid, is more toxic than chloroform (CHCl₃); and chloroform in turn is more toxic than is the dichlorine product (CH₂Cl₂) which can yield only two molecules of hydrochloric acid.

5. Graham, E. A., "Late Poisoning with Chloroform and other Alkyl Halides in Relationship to the Halogen Acids formed by their Chemical Dissociation," Jour. Exper. Med., 1915, vol. xxii, p. 48.

Whenever we administer chloroform, therefore, we are practically injecting HCl into the body, and since HCl is a strong inorganic acid, we are inducing a very severe acidosis. It is significant that neither ether nor nitrous oxide are capable of yielding a strong inorganic acid like HCl and that correspondingly they do not induce this pathological syndrome and are much less toxic. These facts alone should be sufficient to condemn the use of chloroform as an anesthetic agent.

It is an interesting and curious fact that animals whose livers and other organs are well filled with glycogen are much less susceptible to the toxic action of acids and other poisons than are animals whose glycogen reserves are depleted. For example, it has been shown⁶ that newly born pups which are relatively insusceptible to the production of late chloroform poisoning, owe their resistance to their high content of glycogen. An investigation of how glycogen acts in this regard has brought to light a very interesting phenomenon. Glycogen is of course polymerized glucose, and in the presence of acids is depolymerized back into glucose. Accordingly, therefore, in acid intoxication the protective action of glycogen must be largely inherent in some property of glucose. Now as a matter of fact we have found⁷ that glucose (and in fact other sugars as well) inhibits the diffusion of acids through a colloid system and hence likewise must inhibit their diffusion through a cell. (See figures 3 and 4.)

These considerations have a very important bearing on practical points involving the pre- and post-operative care of all patients. Starvation of patients for periods of twenty-four hours or longer before operation should be condemned because by so doing, the danger of inducing an acidosis is greatly increased. Especially should it be emphasized that carbohydrates should not be withheld from patients for long periods; for it is from carbohydrates, of course, that glycogen is made. If for any reason they cannot be taken by mouth, a glucose solution can be given per rectum. If the patient already has a high acidosis, operation should be deferred, if possible, until the acidosis has been successfully treated. But how may we recognize a high acidosis by convenient clinical methods? Various methods have been devised. Many patients will yield an odor of acetone on the breath and will show a strong test for acetone and aceto-acetic (diacetic)

acid in the urine. But even patients with a less severe acidosis are often bad surgical risks. Several simple clinical methods for the recognition of an acidosis have been suggested. Stange⁸ noted that a patient who can hold his breath for only twenty seconds or less is a bad risk for a general anesthesia. Although he attributed this fact to an impairment of the myocardium, Yandell Henderson⁹ later, probably correctly, attributed the phenomenon to an existing acidosis and elaborated upon it as a convenient clinical test. Martin Fischer¹⁰ has recommended the testing of the urine with various indicators which show roughly the amount of free acidity, or hydrogen ion concentration of the urine. The following table gives a number of convenient indicators for this purpose with the concentration in which they are used, the hydrogen ion concentration which they represent and the color reactions:

Indicator—Methyl orange (0.5 gram in 100 c.c. H₂O). H-ion concn.— 10^{-4} . Acid—Salmon pink. Alkali—Orange.

Indicator—Panantitrophenol (2 grams in 100 c.c. alcohol). H-ion concn.— 10^{-5} . Acid—Colorless. Alkali—Green-yellow.

Indicator—Methyl red (0.2 gram in 100 c.c. alcohol). H-ion concn.— 10^{-6} . Acid—Magenta. Alkali—Canary.

Indicator—Rosolic acid (0.5 gram in 50 c.c. H₂O 50 c.c. alcohol). H-ion concn.— 10^{-7} . Acid—Orange-yellow. Alkali—Magenta.

Indicator—Phenolphthalein (1 gram in 100 c.c. alcohol). H-ion concn.— 10^{-9} . Acid—Colorless. Alkali—Bluish-red.

Patients whose urines show by this method, hydrogen ion concentrations of 10^{-6} or less, are generally safe risks for an ether anesthesia, other things being equal; but those with hydrogen ion concentrations greater than 10^{-6} , run more or less danger when subjected to a prolonged anesthesia. Those whose urines react to methyl orange (H-ion = 10^{-4}) are to be regarded as dangerous subjects. It is the usual experience with us to find the hydrogen ion concentration of the first post-operative specimen of urine considerably increased over the pre-operative specimens. If the post-operative specimen reacts to methyl orange (H-ion = 10^{-4}), active measures are instituted to reduce the acidosis as shown in H-ion determinations of the urine.

The measures which we employ to combat such an acidosis are briefly the administration of alkali

6. Graham, E. A., "The Resistance of Pups to Late Chloroform Poisoning in its Relation to Liver Glycogen," *Jour. Exper. Med.*, 1915, vol. xxi, p. 185.

7. Article, now in preparation.

8. Russky Vrach, 1914, vol. xiii, p. 73.

9. "The Time that the Breath can be Held as an Index for Acidosis," *Jour. A. M. A.*, 1914, vol. lxiii, p. 318.

10. "Edema and Nephritis," John Wiley and Sons, New York, 1915, p. 635.

and carbohydrate to a sufficient extent to insure a change in the reaction of the urine. The haphazard giving of alkali and carbohydrate without an accurate knowledge of whether we are giving enough to counteract the acidosis is unscientific and unwise. Alkali should be pushed to the point where the urine is neutral to litmus or just reacts red with phenolphthalein. This urinary test

conveniently be given by rectum. For this purpose glucose (dextrose) is most suitable. It may be given in a four or five per cent. solution in water, physiological salt solution, or in a slightly alkaline solution, by the drop method. If given in too great concentration, it is likely to induce dehydration of the bowel and a prompt expulsion of itself. Glucose solution may also be given intravenously according to the method devised by Woodyatt for the use of his machine which insures the introduction of the sugar at known and regular rates and concentrations. A large amount of sugar is not necessary in order to combat an acidosis temporarily. For example, 80 grams of carbohydrate per day is sufficient to prevent an acidosis from starvation.

Alkali is most conveniently given as sodium bicarbonate or carbonate either by mouth or by rectum. It should never be given subcutaneously because of the likelihood of producing sloughing of the skin. When given intravenously, the danger of over-alkalization is sufficiently great to necessitate the utmost caution and therefore to reserve this method for those cases which demand very urgent measures. If given by mouth, 20 to 30 grains of sodium bicarbonate may be used at intervals of every hour or half hour until the desired effect has been accomplished, as shown by any of the clinical tests mentioned above. If given by rectum, it is desirable that the concentration of the solution should not exceed two per cent. in order not to have it promptly expelled. If the carbonate is used instead of the bicarbonate, it is safer to use concentrations of about one-half of those used with bicarbonate. We have also used to good advantage a number of times an alkaline hypertonic sodium chloride solution by bowel, as suggested by Martin Fischer.

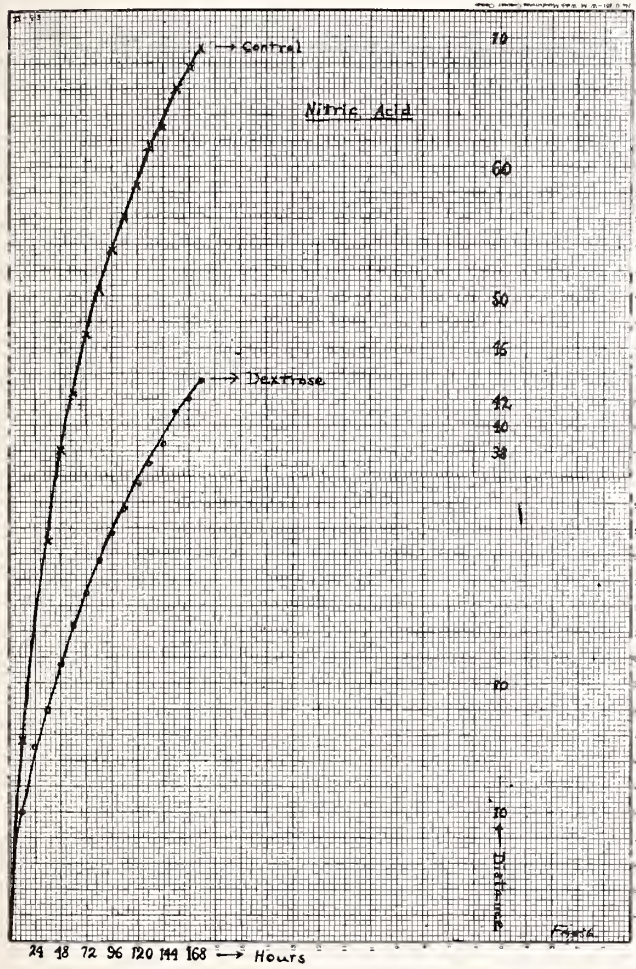


FIGURE 6—Inhibition of diffusion of nitric acid by dextrose. The concentrations, temperature, etc., are the same as in Figure 5.

may also be controlled with any of the simpler clinical tests already mentioned.

The most convenient way in which the carbohydrate and alkali may be administered is by mouth if the patient is able to retain liquids. Carbohydrate may be best and most easily given as sugar. If the patient has a distaste for sweets, a convenient sugar to give is lactose (milk sugar) which may be dissolved in lemonade, milk, tea, etc. The principal advantage of lactose in such circumstances is that it is not sweet. It occasionally is unpleasant because of a "flat" taste which it induces when dissolved in drinks in large concentrations, but this may often be overcome, especially in milk, by the addition of a little salt. When impossible to give by mouth, sugar may

Discussion

Dr. A. H. Beifeld, Iowa City (opening the discussion on Dr. Moore's paper)—It surely is a great privilege to discuss a paper on a subject which is now focusing the technical attention of laboratory men, who have thrown a great deal of light on the condition. As the author has said, acidosis is a manifestation of something causative. By laboratory methods we are able to diagnose a case clinically by means of apparatus, although it may be said that in a certain number of cases at least the clinician himself can almost accurately diagnose the condition by the distinct physical signs that are present. The irregularity of the pulse, a very peculiar sinking of the eyes, in addition to the irregular breathing, are most helpful symptoms in these cases. I shall not attempt to go any further into the discussion of the condition of acidosis as such, but will say that it must be more common in children than in adults

unless possibly in pregnant women, from the fact that the growing child has numerous functions to serve; he has first of all to nourish himself, and in addition he has also to provide for his growth, and then one of the most important functions is to protect himself from his enemies. And the more I see of children the more I am inclined to believe that the arch-enemy of them all is the streptococcus, which has been proven to be one of the principal enemies in child life. I think we can say that congestion of the lungs of the adult is the last of the song sung to the cradle, therefore early infection by the streptococcus often colors the adult's life. In regard to acidosis of infants, that connected with cholera infantum is in the greater number of cases quite thoroughly shown to be due not to excessive ammonia, but possibly due to a retention of mineral acids and that probably due to dehydration, and, instead of being secondary, is almost tertiary. One of the most interesting conditions in connection with diseases of children is that which has been called cyclic vomiting, the phenomena of which are seen by every one of you, and the full significance of which I think is sometimes overlooked. And I should like to register my opinion of the etiology of that condition. These are cases of children who ever so often and with great severity develop vomiting, with or without symptoms due to acidosis. After seeing several of these cases I came across one or two interesting conditions, one a toxemia of the mother who seemed to prefer calomel, and I did use calomel and its clinical effect in the acidosis was nothing less than marvelous, and she said she had taught her daughter that same thing. She had found that the removal of some substance in the bowels would control the symptoms in a remarkable way. The second consideration is the relationship of infection. After the last eight or a dozen cases, removal of the focus of infection has been shown in my experience to almost entirely eliminate these conditions in the mother, as periodical vomiting attacks. And I would like to register my notion in the scale of those who think that periodic vomiting is secondary to infection. Ofttimes we should follow more carefully the clinical factors in connection with these cases. We must remember that there are children who are overfed, on fats especially. We know that acidosis coming after tonsillectomy is nothing more than the stirring up of tonsillar infection. So that when we see at least this type, I believe we have to deal almost certainly with an infection. One case bearing upon this point was, I feel certain, due to infection of the sinuses. This case of periodic vomiting, the first one seen after treating the case I have referred to, was marvelously cured by the administration of calomel.

Dr. J. H. McGready, Independence, (opening the discussion on Dr. Graham's paper)—The subject of acidosis has for the last few years been the chosen battle ground of opinion. There are those who have held it to be the actual cause of death in certain mys-

terious instances, there being equal authority on the other side that there is nothing to the theory of acidosis. It has remained for the laboratory man to give us a clear conception of the fact that acidosis is a clinical entity. This has been fairly well demonstrated by the excellent, logical, sound reasoning presented in Dr. Graham's paper and also in Dr. Moore's paper. So much opportunity for error has crept into post-mortem findings that those who opposed the idea of acidosis have had very sound reasons. It has been said, and it is undoubtedly true, that the condition of acidosis is a step in the process, if not the actual cause of dissolution, and therefore, in a great many cases of sudden death following operation where the pathologic findings were in accord with acidosis, there was doubt as to whether death might not have been due to other causes. But we know from Dr. Graham's demonstration of the process of splitting up of chloroform in the liver that we have a logical, reasonable excuse for these cases of "bad surgical" condition after chloroform anesthesia. There is restlessness and vomiting, even positive delirium, and in some cases the clinical manifestations approach that of acute yellow atrophy of the liver, doubtless due to the splitting up of chloroform into hydrochloric acid, and the production of an intense acidosis. The four avenues by which acid is eliminated from the body are the expired air, the acid gastric juice, the urinary secretion and the sweat. It is very easy to conceive how the perversion of hepatic function and lack of urea formation can rob the body of the protective alkali, ammonia, which is utilized in the control of acid equilibrium. The question of the practical application of these facts to the work of the general practitioner is the one which interests us most. We must not feel free to use the term acidosis as commonly, nor follow the precedent of a few years ago which gave much confusion in affections of the digestive tract, which were charitably clothed with a diagnosis of auto-intoxication. Every death following anesthesia is not a death from acidosis. It seems to me there is well chosen ground for the belief that the anesthetic may give rise to a latent condition which may have been hidden for years and have been missed in the history of the patient, and very closely simulates diabetic coma. This is the opinion of those who oppose the theory of acidosis. And, as Dr. Fuller said this morning, especially in cases of children, careful observation and painstaking acquisition of the history of the case may give this evidence and enable us to avoid error of this kind. Certainly it would be a surgical crime to take a child with a history of cyclic vomiting and operate without a careful, accurate inquiry, at least, into any previous illness and thorough examination beforehand.

Dr. Walter L. Bierring, Des Moines—I would like to call attention to one or two interesting features brought out by the first essayist. The first is that evidently acidosis is a very common condition, and, second, that Dr. Moore has indicated to us a num-

ber of simple methods of determining this disturbed acid equilibrium. But more than that, he has emphasized practical, simple, and easily determined clinical signs by which any one of us can distinguish the condition of acidosis and can even further corroborate the same by laboratory tests, and in this particular the paper has made its most valuable contribution. I have seen Dr. Graham at work in his laboratory, and it interested me to find that a surgeon who was otherwise engaged in real surgical work, was doing his own laboratory work. Because of that fact I think his presentation carries with it considerable significance. It is interesting to know that this work, in a measure at least, coincides with the work of Dr. Martin H. Fischer. In that connection I would like to refer to Dr. Graham for his closing remarks the question of fatty degeneration of the liver—as to whether this is really a disintegration, a distinct change in the tissue, or simply an alteration in the elements comprising the cells. Dr. Fischer, in his rather striking way, has told us how he can take two test-tubes, one containing water and the other olive oil, and by mixture through varying additions of the two ingredients, changed them from a liquid to a solid substance like brain tissue. He has indicated by these experiments that fatty degeneration and fatty metamorphosis are really a change in the tissue elements due to the variation in the acid content. Some years ago the interesting work of Dr. H. Gideon Wells was published, showing the effect of chloroform poisoning on the liver. He referred to it as a fatty degeneration. At the meeting where Dr. Wells presented the results of his investigations, Dr. Louis B. Wilson of Rochester reported twenty post-mortem observations with similar changes in connection with ether anesthesia. So it does seem that there are other elements besides hydrochloric acid in the distribution of chloroform in the liver which influence the acid content of that organ and produce similar results. I should like to emphasize here that these two papers, presenting as they do two independent viewpoints, constitute a distinct contribution to our program, and we are under obligations to the chairman who arranged them.

Dr. William Jepson, Sioux City—One point was brought out which I think is indeed most important, and that is the length of time that a patient suffering from acetonuria might hold his breath. I wish just briefly to point out the reason for this. It is well known that the degree of acidity or alkalinity in any fluid is dependent on the degree of concentration of hydrogen ions in the same. And this also bears relationship to carbon dioxid pressure in the alveoli of the lung, which is approximately, under normal conditions, about 40 c.m. In other words, the respiratory center in the medulla is stimulated by possibly two agents in the blood, namely: the CO_2 pressure in the alveoli, or really the concentration of hydrogen ions in the blood. Now, it is well realized that we can lower the blood-pres-

sure here from 40 c.m. to a point considerably below that by feeding a patient acids, or having retained in the body those acids which have been normally secreted or which are being pathologically poured into the blood as in the instance of the administration of chloroform. Hence the acidity of the blood gives us the key concerning respiratory excitement. We must not forget that the liver may have another relationship to acetonuria, in that the blood as it comes back from the portal veins is supposed to carry ammonia, and that the liver cells, in order to maintain that state of alkalinity of the blood which is necessary, convert it into urea except that amount which is required to balance any excess acids which have gained access to the blood from any source. Furthermore, chloroform by damaging these cells, may bring that about. Also the kidney cells, by their selective action, have power to diminish the acidity of the blood through elimination. Then the point which I would particularly call to your attention, as has already been done, is that the early phenomenon of acetonuria, or increase of acid in the blood, is the symptom of respiratory excitement.

Dr. G. E. Decker, Davenport—There is a close relationship between anesthesia and acidosis. We have all noticed that occasionally a patient under anesthesia, whether ether or gas, is a noisy breather who works hard; he snores and his hyperpnea is away out of proportion. We have noticed in our work, both with gas and ether, that these patients always do badly during the next twenty-four or forty-eight hours. We thought at first that this was due to their unusual exertion; any patient who works as hard as that for from twenty to thirty minutes, must have the same exhaustion as if he had done the same amount of work elsewhere, and especially when he had not been trained to this exertion. There is a distinct muscular exhaustion accompanying such hyperpnea. We have seen less of this since we have regularly used Dr. Martin H. Fischer's idea of testing the urine with methyl red, which he advises as an indicator, changing any urine which shows an acid methyl red reaction by the administration of sodium bicarbonate and glucose, or in children by giving some candy during the twenty-four hours before operation. All our patients now regularly receive a quart of 1½ per cent. sodium bicarbonate solution in which there is corn syrup, immediately upon being put back to bed after operation. They retain this enema and get along much better.

Dr. Graham—Dr. Bierring has raised the question as to the origin of the fatty changes which we find in the viscera, and calls attention to the work done by Martin H. Fischer which seems to bear out the fact that visible fatty changes which are evident in the tissues are simply due to a change in the condition of the fat by the acid. Now, as a matter of fact such an explanation probably holds good for the visible fatty changes which one finds in the kidney, because numerous analyses of the kidney showing apparently an excessive amount of fat, demon-

strate that there is no larger amount of fat there than in the normal kidney. In the case of the liver, however, and in certain other viscera as also the heart, we know that most of the fat comes from outside sources; that the fat in these cases is an infiltration rather than an actual degeneration of the cytoplasm of the cell. We know this especially through the brilliant work of Rosenfeld which shows that in any condition associated with a very fatty liver, such as, for example, experimental phosphorus poisoning, the lesion did not appear if the animal used was a lean subject—if all the fat were starved off first, it would not show a fatty liver after poisoning with phosphorus. On the other hand, if the animal was fat, Rosenfeld was able to demonstrate an increase of fat in the blood. He was also able to show in a very pretty experiment that if one gives Sudan III to rabbits, which they will tolerate very nicely and which will at the same time stain the fat pink, and then poison them with phosphorus, he will find that the viscera which have undergone fatty changes are already stained pink, showing that the fat was preformed before it reached the cell. Also final evidence consists in the fact that dogs have a capacity for storing up in their subcutaneous tissues sheep fat as sheep fat rather than as dog fat. If dogs are starved so that the dog fat is gone, then fed sheep fat, they will store up sheep fat in the subcutaneous tissues. Now, if we feed the dogs phosphorus to the extent of poisoning them, we will find fat in the liver, but the fat will be sheep fat and not dog fat. In regard to the question as to why we sometimes get these changes with ether when there is no hydrochloric acid available from the ether molecule, I would say only that I had no intention of implying that the syndrome of pathological conditions referred to is due merely to hydrochloric acid. I contend that they are due to different acids, and in ether we get an excessive production of organic acids of different kinds, as lactic, acetic, formic, etc. Under experimental conditions they can also be induced by substances, such as excessive concentrations of alkalis, the action of which upon the tissue colloids is practically identical with acids.

ACIDOSIS AND ITS RELATION TO UPPER RESPIRATORY CONDITIONS*

F. A. STEVENS, M.D., Sioux City

A discussion of acidosis must take into consideration the metabolism of the body which is concerned with the oxidation of food substances, the carbohydrates and fats yielding of the energy and the proteids giving the building material. This process, however, results normally in the formation of acids which the organism is able to neutralize or eliminate, and it is only when the

acid production exceeds these two compensating factors that a condition approaching acidosis is said to exist. The acids produced are both organic and inorganic; the first, derived from the food elements mentioned, are largely diacetic and B oxybutyric, while the latter come from the sulphur and phosphorus present in the proteins of the diet and body tissues. There are then two possible types of acidosis. That due to phosphates is associated with decreased kidney function resulting from disease of that organ, usually nephritis or from anuria so frequently associated with infantile diarrhoea. It is of interest here only so far as it may be a post anæsthetic complication. The most common type is probably due to an intensive and imperfect oxidation of fats which form most of the diacetic and oxybutyric. Although these substances are found in small amounts in blood and urine of healthy children and adults, a decrease in the available carbohydrate as in starvation or diabetes, or a marked increase in the body metabolism found in fever or infections in young children or exophthalmic goitre in adults result in an exaggerated fat and protein destruction and their appearance in quantities demonstrable by qualitative tests. Essentially the cause is a relative carbohydrate or sugar deficiency. These acids thus produced attack the available alkali existing in the blood largely as carbonates, increase the acidity of the urine and provoke ammonia formation and excretion so that the body is not injured if they are in moderate amounts. Through the alkaline carbonates of the blood serum, the severity of the condition may be most readily determined, since they are the important means of carrying of the waste carbon dioxide of the tissues to the lungs. It is by estimating this carrying power by Van Slykes apparatus that the principal observations have been made in the laboratory, supplemented however by other factors. As the diacetic and B oxybutyric acid rise, there is roughly less carbon dioxide combined in the plasma. Until it reaches half the normal amount there is little cause for alarm, but if below one-fifth, condition should be considered serious. Frequently radical changes may be present here without definite clinical symptoms. Acetone and diacetic in the urine according to our evidence indicate a change in this combining power, but because of the lack of relation between the acids of the blood and urine they can be but roughly proportional. Large amounts, however, should be viewed with suspicion. As these acids increase and the blood can carry less and less carbon dioxide, a place is finally reached where it becomes less alkaline than normal, but it

*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1917, Section Ophthalmology, Otology, Rhinology-Laryngology.

never becomes acid until immediately before death. What is called acidosis then is gradual change, at first affecting the respiratory function of the blood and only later the chemical reaction. The ill effects are due evidently to poor ventilation, a heightened metabolism of the tissues and possibly to the toxic effects of diacetic and oxybutyric acids themselves. In clinical medicine (increased acid production) may complicate a number of conditions and may be augmented or provoked by common surgical procedures. The usual limited diet immediately preceding most general anesthetics, is experimentally sufficient in children, if continued over one or two days, to cause very marked chemical and symptomatic signs. Although starvation is most commonly practiced in abdominal conditions, it is followed out frequently where ether or chloroform are to be used. The anesthetic in addition with the danger of hepatic and renal injury, which have been shown to interfere with carbohydrate metabolism and with kidney elimination, increases the danger. If acetone is present after anesthesia, the usual vomiting is more frequent and severe. Often there is another complicating factor, the presence of infection, which even in a subacute or chronic stage increases the susceptibility of the patient. Aside from surgical procedure this may be noted in diabetes when the presence of a furuncle or abscess may cause the excretion of acetone and diacetic over long periods. After the local process has resolved, the urine becomes clear and the sugar tolerance increases. The effects of infection, have been shown in the laboratory from a study of the blood and urine of children on a diminished diet. During an exacerbation of a rhinopharyngitis or a chronic osteomyelitis, the chemical pathology exceeded that of the normal period. Evidently from the surgical standpoint, the diet, the presence of an infection and the anesthetic, are important factors. The manifestations of acid intoxication aside from the chemical, are of an indefinite character. The advanced picture of drowsiness and deep irregular respiration with acetone and diacetic in the urine in large amounts, is usually easily diagnosed but offers a less favorable prognosis. It is in the early stages and in the prevention that treatment is most effective. Reasonably advanced changes in the blood may exist without noticeable symptoms, but in experimental work a slightly irregular pulse, increased respiration and nausea with vomiting are first seen. Fever may occur and has been used as an argument in favor of the infective origin of many cases. The most accurate index is certainly the combining power of

the blood. It is simple and should be used where there is the least suspicion.

The frequency of this intoxication in children is of interest because recurrent vomiting, some of the fatalities of gastrointestinal disorders and of respiratory infections are associated with it. Here are included isolated cases and epidemics with emesis, drowsiness and acetone in the urine. From the few recent recorded series, the presence of tonsils and adenoids, a previous nasal discharge or a frank respiratory infection, as in Metcalf's report, are striking. In the Concord group the usual age was between two and eight, and in three quarters there was a febrile bronchial infection preceding the attack three to five days. Aside from this, authors have reported cures or improvement in the true recurrent vomiting after treating naso-pharyngeal conditions. High carbohydrate feeding is of undoubted benefit. Analysis of these facts at once indicates the possible role of respiratory infection as one of the etiological factors. The unstable plane of metabolism before puberty incident on the growth as well as the normal balance of the organism would easily account for the higher per cent. in the young. A fruitless search for patients with normal throats between two and eight, impressed on us the commonness of tonsillar infection and the possibility of some connection. A preliminary survey of several cases studied since, may be offered here. They were chosen with regard to severity of tonsils and adenoids and were free from other infection. After estimating for several days the average acid formation, the food intake was slightly decreased and they were placed in groups according to the ease with which blood and urinary changes could be produced. It was found that the clinical throat findings and chemical groupings roughly coincided. If much pathology existed, the results were much more marked, but more statistical work is necessary before the relationship can be thoroughly established. At present the physiological connection would be purely theory. It must suffice to say that proper treatment of any abnormal condition of the upper air passages is most logical in these cases.

The practical side of this subject is in the treatment of these abnormal conditions of the throat and nose. To the specialist the medicinal care offers no complications but there are certain precautions to be observed in surgery. A case which has had attacks at all resembling acidosis and nasal infection should be carefully handled. Previous to operation, the urine should be free from acetone, and large amounts of carbohydrates, as oatmeal or rice gruel, should be given the evening

previous. Certainly no case should be subject to an operation on the throat during an acute local infection. After the operation, if possible, there should be no starvation but a similar diet started as soon as is practical. Large amounts of fat and cream should be avoided as these are predisposing factors in acid production. On evidence of hyperpnœa without lung signs, the urine should be considered both as regard the amount and as to the presence of acetone and diacetic. If it be small in volume, it is best to force water by mouth and saline by rectum to aid elimination. Any suspicion of acid intoxication should be confirmed by a Van Slyke determination. If the symptoms and vomiting occur persistently with increasing drowsiness, 4 per cent. NaHCO_3 and 5 per cent. glucose should be used intravenously in half liter lots of normal salt. It is to be remembered that glucose, whether by mouth, rectum, intravenously or subcutaneously, is the means of diminishing acid formation, while alkali simply aids in neutralizing the excess formed or that retained through failure of the kidney function. By the application of these few principles both to oral and general work, the surgical mortality should be much decreased.

From the laboratories of Internal Medicine, University of Iowa, under the direction of L. Baumann and from the Department of Specialties under L. W. Dean.

Discussion

Dr. R. H. Parker, Des Moines—After hearing this excellent paper by Dr. Stevens, it seems to me that we must all be impressed with the wonderful field for laboratory research work when we attempt the solution of some of the problems of acidosis. Increased physical exertion means an increase of the amount of carbonic acid in the blood. This excess of carbonic acid stimulates the respiratory center to increased action so that the excess acid is eliminated. It is a long way from this successful attempt of the system to rid the blood of an excess of acid to the case of diabetic coma. Here we have an acidity of the blood which cannot be thrown off. Life and acid blood do not stay long in the same body. If we mean acidosis when a small amount of acid is found in the blood, then acidosis is the rule of health, for acids are being constantly eliminated. So long as nature's defenses are all in working order, the blood can care for an enormous amount of acids. An article by Crile entitled "Alkaescence, Acidity, and Anesthesia," makes interesting reading. From a series of experiments he concludes that anesthesia is due to an increased acidity of the blood. If the acidity is slight, the anesthesia is slight. As acidity increases, consciousness is lost. The anesthetic may be pushed until the system makes no farther attempt to throw off the excess acid and then we have anesthetic death—acid death. Nature's lines of defense against an excess of acid in the

blood, are a maintenance of the alkalinity of the blood by taking up the carbonates from the system; the elimination of carbonic acid by the lungs, acid elimination by the kidneys, and changing neutral urea into ammonia. Laboratory tests made along these lines of elimination show the condition of blood as to alkalinity and acidity. The clinical signs of acidosis are rapid respiration, highly acid urine and the rotten apple odor of the breath. Treatment consists of giving large doses of sodium bicarbonate. The urine should be made alkaline. Among the predisposing causes of acidosis are infections, great mental emotion, starvation and anesthesia. Chronically infected tonsils might tip the balance to the acid side. If there are any class of patients that are subject to strong mental emotion it is the child that is given an anesthetic for tonsil work. The noises emanating from the old time chamber of horrors could have been no worse than those from our anesthetic room on the days we do our dispensary work. We don't starve and purge our patients before operations as we formerly did. Anesthetics are better given for tonsil work than they were a few years ago. Reasonable speed in operating will eliminate the ether menace still more. To safeguard these tonsil operated cases still farther, prior to operation we may give them glucose, which in some way aids in the proper oxidization of fats, and large doses of sodium bicarbonate to bring the blood up strongly alkaline. From my own experience I do not think acidosis a frequent sequel to tonsil operations. During the past three years at the Methodist Hospital we have operated several hundred cases and no cases of acidosis have resulted.

A CLINICAL PAPER*

Describing a case of manic depressive insanity

GERSHOM H. HILL, M.D., Des Moines

INTRODUCTION

This kind of mental derangement is characterized by the paradoxical fact that this disease is both curable and incurable. A patient of this kind may be very disorderly or profoundly depressed at times, extending possibly through a period of fifty years, and yet after all reveal no marked mental deterioration. This mental disease is distinctly periodic, with a functional rather than a pathological brain condition. The etiological factors, both predisposing and exciting, are often obscure and uncertain.

One-fourth of all the insane in the state hospitals and in the county asylums and in sanitariums for mental cases, young and old, both male and female, are cases of manic depressive insanity.

*Read at the February meeting of the Polk County Medical Society

ANAMNESIS

This man was born in Germany, and has the equivalent of a good common school education. He was thoroughly taught the Bible and the religion of the Lutheran church. His father came to the United States in the year 1852, and died of yellow fever at forty. His mother came in 1873 and died two years later of heart disease. His older sister remained in Germany and died at seventy-five. The other sister accompanied the patient to the United States, and died at fifty of asthma. The oldest of the brothers, eighty-two, is living in Massachusetts. One brother was accidentally drowned when about forty years of age. Another died, cause unknown, at about the same age. The fourth brother was a captain in the volunteer service during the Civil War in this country, and died of old age.

As a boy he was probably the brightest in the family. He learned the tailor trade thoroughly before he was eighteen. Worked successfully as a journeyman one year in his native country and one year in the city of Paris.

At twenty his mother obliged him to come to the United States, where he already had relatives, to avoid serving in the German army. He did piece work in a tailor shop in Cincinnati until he had saved a few hundred dollars. He invested \$275.00 in suit patterns, came to Iowa, located in a promising county seat, and opened a tailor shop, where he was enterprising and prosperous from the outset. In the spring of 1874 he became tired and nervous, lost his appetite, and did not sleep well. In order to free himself from care and to have a change he went to California. After he had been there a week or two, he began to work at the tailor trade, enjoyed excellent health, and when he returned in the fall of the year had not only made expenses, but had saved a few hundred dollars. He was called home by his brother because the man in charge of the tailor shop permitted the business to run down and the bills to go unpaid, so that when the owner returned, he discovered that his stock of goods and his accounts were not worth half as much as they were when he left home in the spring.

In January, 1875, he went East to marry a woman to whom he had been engaged for quite a long time. He was then in a hypomanic state; lost self-control, so that a man with whom he was well acquainted brought him back to Iowa, and before the end of that month he was committed to a state hospital for treatment. The following is an abstract of the clinical record there found:

CLINICAL RECORD

This man was admitted in January, 1875. His age was twenty-six, he was single. History states his first attack came a few days before admission while on the train coming from the East. History also states that the disorder was increasing without rational intervals. He seemed troubled over business matters. When admitted, the patient was handcuffed and in a high state of excitement, noisy and violent. He continued quarrelsome, fault-finding and mildly excited for about three months. Spells of excitement would alternate with spells when he was somewhat depressed. Four months after admission he was quiet and orderly. Six months after admission he was again noisy and restless, and continued so for about two months. He then became quiet and more tractable. About ten months after admission he again became depressed, was melancholy for a time, then began to improve gradually, and in December he seemed to be in a normal condition and was discharged from the institution as recovered.

This man was again admitted to this institution after an absence of eleven years, thirty-seven years of age and married. History states that his second attack one year ago lasted two months. The duration of the third was four months. The first symptom of this, the fourth attack, occurred about one week ago. He had been taking lessons in mental science under a faith cure doctor. The depression had been increasing. The mental derangement now seems to be on the subject of mental science. He continued somewhat excited and had depressed periods. About one month after this admission he became maniacal, had delusions and hallucinations of a religious character. He thought he was a special messenger from God. Patient continued in a state of more or less maniacal excitement, with periods when he was quieter and not so disorderly or restless. In June, 1887, he was very much depressed and confused, at times could not eat or sleep. In July he had an attack of typhoid fever. In August he had recovered from his typhoid fever, gained in weight and strength, and was mentally much improved. After nine months he was discharged recovered.

In 1899 he spent three months in a Cincinnati sanitarium. The next year he recovered after four months treatment in an Iowa hospital. The same experience was repeated in 1899. In 1907 in this same hospital he recovered after receiving ten months treatment.

In 1911 he came to The Retreat and again in 1913, each time remaining four months.

This, the third time, he has been in The Retreat since October, 1916, where mild restraining influences and legal guardianship prevent relapses and loss of self-control.

At the two state hospitals and at The Retreat this case has always been regarded as one of

manic depressive insanity.

On each admission to the state hospital he was very nervous, loquacious, and destructive of clothing and bedding, but such conduct would soon subside and he would gradually approach a natural condition.

The history accompanying the patient to the hospital stated that he was a first class citizen, a good business man, an excellent father, and fully responsible between his attacks.

This man has never used alcohol nor tobacco, habitually, nor injuriously. Never has used drugs, nor had syphilis. Heredity does not appear to be a predisposing cause in his case, but rather the tendency to constitutional instability characterized by an ambitious, industrious, self-reliant and frugal disposition. There has been no adequate exciting cause for any of the attacks.

ANOTHER ATTACK

The second time he was accompanied by his daughter and her husband. The patient has shown some symptoms of being disturbed for several weeks. He has been smoking excessively and wanting to go somewhere, wants to go to Canada and California. He finally went to Yellowstone Park, and let his wife go with him. He probably was hypomanic before he left home, arranged and repaired rooms, clothing, etc., etc., and after leaving home he talked excessively and extravagantly, had delusions of grandeur, thought himself very wealthy and an unusual business man, and was very free with his money. He gave the driver \$20.00 to go and get him a bottle of beer. He paid \$3.50 for a shave. He told people he had unlimited means, and the last few days he was in the Park he got rid of three or four hundred dollars. He said that he had bought the Park. He telegraphed to his daughter to come at once with her husband, and sent a second telegram which was not quite as urgent. Before his people got to him he had left his wife and gone into the hills. He at first refused to go with his son-in-law, and claimed that he was going to California. Had hallucinations of hearing, and practiced wireless telegraphy by sticking his fingers in his ears and tapping his head. He is somewhat confused and partially disoriented and restless. On the train coming here, he at times was somewhat unruly. At one time he offered to strike his son-in-law. He gave his coat to the railroad porter and wanted to throw away his hat. Arrived at The Retreat, he seemed to be oriented, but quite restless and somewhat displeased with his people for the way they have treated him, says he is divorced and that his wife has been sent to the state hospital.

He gradually regained self-control, a reasonable and trustworthy disposition, was permitted to go to town as often as he pleased, and became uniform in habits and stable in mind.

A letter received from a district judge reads in part as follows:

I write you with reference to a man of this place, now at The Retreat. I have known him for more than forty years. Something like a year ago, he and his family and I had a conference about some business matters, and at that time he exacted a promise from me to see to it that he would not be taken to the state hospital, but that he be put in the care of your institution, and it has now been done. He commenced with nothing and accumulated a reasonable competency for himself and family. After I had known him for some time, he married an estimable woman who is still his wife. They have three children, all married (a son and two daughters), all of whom live in this town. All of the members of the family are of the highest character and best repute. As I understand it, for nearly forty years, at periods from five to six years apart, he has become deranged for comparatively short times, from one to six months, then he would be normal again for some years, during which time he has great business judgment, and at all times integrity. I now write to ask you as to what his condition is and approximately when he will be in a normal condition again.

DERANGED AGAIN

During his absence of nearly three years, his capable and devoted wife failed in health and died of organic heart disease, in August, 1916.

His favorite daughter, who has always remained at home with her parents, required a surgical operation, which was made in another state the following month. She was visited daily but separately at the hospital by both husband and father. After the crisis the father returned to his home, and in six weeks remarried in a clandestine manner. The bride had lived a long time in the town. She was a poor widow with a grown-up daughter, considered unsuitable to become the natural guardian of her spouse and to grace his spacious and excellent home. The groom became more and more restless, sleepless and optimistic. Domestic scenes soon changed from a comic to a tragic variety. Finally, while the chief performer, in the middle of the night, was rapidly transforming the furnace room into a pandemonium, the bride locked the basement door, and by phone, gave a policeman "the cue," so they at once introduced the last act of the play. Handcuffs were applied, commitment papers were secured, and the man described, accompanied by the sheriff, came to Des Moines on

the first train. Guardianship for the groom was secured by the bride, affectionate letters were written by her which the groom was incompetent to answer. A few months later the marriage contract was annulled, the home was vacated, the banker was made permanent guardian of the property, and the superintendent of The Retreat was appointed permanent guardian of this patient.

Last summer the patient was quite normal, and was paroled. He roomed at one of the best hotels in Des Moines, and took his meals where he liked. However, he was required once a week to dine at The Retreat with the superintendent. In two months he began to be restless and hypomanic, so was required to end his vacation.

STATE HOSPITAL STATISTICS

In the last biennial report of the Board of Control, we find that there were 1696 male and 1108 female patients admitted in two years, 588 more men than women. In the table enumerating the different forms of insanity of patients admitted, we find that the manic depressive psychosis was diagnosticated in 305 men and 321 women. Since the number of male patients admitted is much greater, and since sixteen more women than men had this particular disease, it proves that women are more likely to have it than men. Since this is both a curable and a recurrent form of insanity, it is probable that a goodly proportion of the fifty-nine patients discharged recovered, and of the 1203 patients who went home on parole, and of the 366 patients who were readmitted, were cases of this kind. Lastly, it is found that of the 2318 patients counted, 626 had this psychosis, which is much more than one-fourth of all the patients admitted into the four state hospitals.

GENERAL STATEMENTS

In order that this description of this psychosis may be more comprehensive, complete and authoritative, the following quotations are made from Paton:

For a long time alienists have recognized the fact that there are psychoses characterized by maniacal outbreaks recurring with well-marked periodicity and broken by intervening lucid intervals. Moreover, clinical experience has shown that patients afflicted with melancholia later in the course of this disease not infrequently develop maniacal symptoms.

A new epoch began when certain psychiatrists affirmed that the so-called circular insanity was a disease entity, it became evident that hitherto sufficient care had not been exercised in estimating the relative importance of all factors pertaining to the

etiology, symptomatology, course, prognosis, and termination of these periods of mental aberration. Moreover, clinical experience had demonstrated that the only logical and scientific method of studying disease was from this broader and far more comprehensive standpoint, and, as a result of these changes of view, less stress was laid upon individual and isolated symptoms, and an attempt was made to give each event in the disease its just valuation. But as soon as the truth of these underlying principles had been recognized it was found that many cases of so-called simple mania or melancholia, as well as of the mixed forms, have many features in common, and on closer investigation it also became apparent that pure cases of mania or melancholia practically never occur.

Kraepelin, imbued with these ideas, grouped together under one head diseases having a common symptomatology with a certain more or less well-marked tendency to recurrence and a similar outcome. One of the fundamental facts that served to direct investigations along this line was that in many forms of alienation a group of symptoms are in the foreground of the clinical picture which formerly had been considered specifically characteristic of the so-called circular insanities. The presence of a marked degree of mental deterioration and in some cases its absence in others was also an important consideration that influenced the genesis of the views entertained by the Heidelberg school in the formulation of the conceptions of the manic-depressive insanity.

In the maniacal form the majority of patients exhibit motor symptoms which are definite and in a measure specific. The one most apparent to the casual observer is the general restlessness. The majority of maniacal patients are never still. In the incipient stages every thought and new idea is immediately translated into action; there is a psychomotor excitability; movement is easy; rest is impossible.

In nearly all cases during the earlier stages a marked feeling of exaltation is present. The patients are pleased, self-complacent, and in the best of humors. Unquestionably, changes in the organic sensations, such as absence of the ordinary sense of fatigue, may in a measure be responsible for this mental attitude. As the maniacal stage advances this exaltation increases rapidly. The individual becomes vivacious, elated, hilarious, is thrown into transports of delight or ecstasy; later he is boastful, gives vent to the wildest statements, and becomes a mere blusterer. The correlative emotional expressions are all exaggerated.

The physical symptoms of mania are those common to most of the forms of mental excitement accompanied with motor restlessness. The pulse as a rule is accelerated, the rapidity rising as the motor restlessness increases. The blood-pressure in most of the uncomplicated cases is low during the period of excitement. Slight causes—a person entering the

room, a sudden noise, or anything which attracts the attention—frequently produces wide variations in pulse and in blood-pressure.

Fisher, after a careful examination of the blood in a number of cases, has come to the following conclusions: (1) there is no pathognomonic blood change during the maniacal phase; (2) anæmia is not a causative nor a constant factor; (3) the hæmoglobin and red cells are frequently increased in number during the attack, and (4) leucocytosis is almost a constant accompaniment and apparently a result of psychomotor activity.

In nearly all cases of depression certain symptoms occur which are also to be met with during the cycle of greatest mental perturbation. Not only is this a fact, but the gradations which exist between marked manic excitement, on the one hand, and deep depression, upon the other, are so gradual that it is seldom justifiable to consider the two states as fundamentally antithetical. As motor restlessness is a prominent symptom of mania, so the psychomotor retardation may be equally characteristic of the state of depression.

The appearance of the patient suggests a general diminution in the ideomotor activities of the cerebral cortex. All movements are slow and made with difficulty. This is particularly true for speech. The reply to a simple question is given only after the lapse of a considerable interval of time, the tone and pitch of the voice are lowered, the intensity of all movements of the lips and the tongue is greatly diminished. The same limitations are noticeable in many cases in the facial innervation. The intensity of all voluntary movements, not only of the face, but of the extremities and trunk, is generally impaired. Associated with the delay in the muscular reaction and decrease of the intensity of movements in many cases there is an accompanying emotional depression as well as a retardation in the processes concerned in thought. These symptoms vary greatly. The emotional instability so characteristic of the maniacal state, as a rule, disappears during the period of depression, and is replaced by an unbroken and stable affective tone. The reaction time during the period of depression is greatly lengthened. The pulse generally becomes slower. The blood-pressure, which was low during the period of manic excitement, other things being equal, rises during the depression. In the milder cases time and spatial orientation are well preserved, but in the severer types there may be marked confusion. Sometimes the patients are conscious of the subjective difficulty in the associative processes. They not infrequently affirm that they are unable to speak or to think; they appreciate the difficulties, but are unable to assign any definite reason for them.

Nothing is known in regard to the dominant causes which determine the character of the attacks. There is no satisfactory hypothesis that attempts to explain the reason why motor restlessness and exaltation are the dominant features in one case and

in another psychomotor retardation and depression.

The duration of the attacks may vary greatly from a few months to one or two or three years. Cases have been reported in which the attacks lasted for six or seven years.

The mental condition of the patients during the lucid interval varies. Cases have been recorded in which frequent attacks have occurred during the life of the patient, and in the intervals between the attacks the intelligence seemed to be unimpaired. One author mentions a patient who died at the age of seventy-eight and who had suffered from recurrent attacks for forty-four years, and yet during the remissions had exhibited no trace of intellectual impairment.

MEDICOLEGAL ASPECTS*

Without going too deeply into the legal conception of insanity—and insanity is, after all, a legal, not a medical concept—it is, perhaps, enough to say that a crazy man, in the eyes of some judges, most lawyers, and practically all jurymen, is a man who sees and hears imaginary things, is excited, tears up things, assaults people, goes nude, and does other things calculated to attract attention.

But a disorder whose episodes are separated by periods of lucidity when the subject appears normal to the layman, a disorder which is sometimes manifested by episodes in which the excitement or the depression is so slight as not to be suspected of being pathological by his friends; and finally a disorder the two phases of which are so exactly opposite, and which exhibits frequently the so-called "mixed states" where depression is associated with flight of ideas and increased psychomotor activity, where exaltation is associated with difficulty of thinking and retardation, such a disorder presents many peculiar problems in its legal aspects. For example, in the prodromal period of a manic excitement, or a depression, the patient may take a drink now and then, in the former case merely because he is restless and exalted, "feels good," and in the latter case because he "feels blue," and has a vague idea of seeking artificial cheer. Suppose then that he is seen several times in an excited condition, the smell of liquor is noticed on his breath, and then he is arrested for some crime. Naturally, witnesses appear who testify that the defendant never acted peculiarly except when he had been drinking, that he was frequently drunk, and so on.

Furthermore, let us suppose that after a long lucid interval, on a certain day something occurs to precipitate an excitement; during this excite-

*Editorial Medical Record

ment he commits an overt act and comes within the purview of the law; and immediately following this act he is semi-stuporous for a time, and gradually emerges from this stage into an interval during which he is put on trial. Now, it is difficult, almost impossible, to convince a jury that this man who appears before them quiet and composed, about whom witnesses may be found in plenty to testify that he has always seemed sane to them, that they saw him the day before the crime, for example, and he seemed perfectly all right. An effort to show that the prisoner is of a manic-depressive make-up, that he had a mild attack some years since (about which many witnesses will testify that it was due to drink), that a sudden attack was precipitated by an emotional shock of some kind, during which attack he committed the crime, will be regarded with great suspicion by the public. These are but instances of the phases of the problem presented by the manic-depressive.

HEART DISEASE IN CHILDREN*

T. N. WALSH, M.D., Hawkeye

In almost all cases of heart disease in children, the causative agent is some microorganism circulating in the blood stream, (congenital heart disease excluded). It is one of the pathological entities resulting from various diseases, especially those of an acute infectious type.

A working knowledge of the structure and physiology of the heart and blood-vessels are necessary to an understanding of its pathology.

The normal heart in children varies somewhat from that of the adult, the pulse is more frequent, it is more easily disturbed in rhythm. The cardiac impulse is usually in the fourth space (at least up to the seventh year of life); before the fourth year of life, the apex is outside the nipple; from about the fourth to the ninth year, it is in the nipple line. The impulse is weaker and harder to feel in children as compared to the adult. By auscultation the heart sounds are louder and heard over a larger area than in the adult. The pulmonic second is louder than the aortic second. Under excitement, reduplication of the heart sounds is common. Such are some of the normal features in children as compared with the adult.

The most common cause of heart disease in children is rheumatism. It manifests itself by symptoms which are much more obscure than

those in the adult. The joints are frequently but slightly involved. In many cases the patient does not go to bed. The parents call it growing pains, the patient lies around for a few days, and is about in about a week or so; if the heart is damaged, he does not regain his appetite, becomes anemic, the pulse remains fast. These symptoms gradually pass away and the patient may regain his former health, depending upon how much damage is done to the heart. The insidious nature of these heart lesions cause symptoms which the parent does not consider alarming enough to call a physician, and sometimes the physician does not consider the case of enough importance to make a systematic examination. Even if he does so, no murmur may be present; perhaps some enlargement may be found which is hard to define in many children, an accentuated pulmonic second, a fast pulse—anemia. But without a murmur these symptoms are too often not considered of sufficient importance to justify a provisional diagnosis of heart lesions. A precordial murmur, which is not of pathological significance, is often heard after acute infections, but it never has the physical signs which accompany a valvular lesion, yet a physician should never arrive at a hasty conclusion and pass the matter by as the familiar weak heart.

Some of the insidious cases in which the murmur may not appear until after the patient is up and about, may escape the most thorough examination in the acute stage; but they rarely escape the doctor who persists in watching a suspicious heart for several weeks after apparent recovery of the patient.

Chorea is generally believed to be an evidence of rheumatism, a heart lesion frequently accompanies it. Scarlet fever is sometimes the cause of carditis. Pharyngitis and tonsillitis, especially in children, are sometimes accompanied or followed by a heart lesion. (I saw three cases of heart disease develop in an epidemic of tonsillitis with joint pains in the spring of 1917.) Tonsillitis probably bears some relation to rheumatism.

In rheumatic attacks, not infrequently the child may have in one attack, joint pains; in another, tonsillitis; again erythema; again chorea. These local lesions are probably the same disease manifesting itself in different ways, and children are prone to have repeated attacks; more so than adults, and in any of these various forms the heart may become affected.

Subcutaneous nodules are present in about one-third of the cases of rheumatic carditis. They are seldom seen during the primary attack of rheumatism, but appear in recurrences of the dis-

*Read before the Austin Flint-Cedar Valley Medical Society, at Waterloo, July 10, 11, 1917.

ease. They point to the fact that the disease is still active with the possible development of a heart lesion. They vary greatly in size and number, appearing on the flexor tendons, elbows and scalp.

The signs of recurrent attacks of heart lesion are: any rise of temperature which persists and cannot be explained otherwise, should be examined frequently for an exacerbation of the carditis. Joint pains, even if trivial, should be watched.

Any sudden development of anemia, with malaise, is frequently a forerunner of a new outbreak of heart trouble. Any sudden rise in the pulse, above what would be normal, is suspicious. The lesions found in children are similar to those of the adult.

Pericarditis, endocarditis and myocarditis; the heart may be affected in two ways. It may be directly affected by the organism and become the seat of the lesion, or the muscle may be affected by the toxin manufactured elsewhere in the body. The toxin may affect the muscle causing an acute myocarditis. The muscle loses its tone, some dilatation frequently occurs. With the cessation of the production of toxins, the myocarditis may subside and the muscle regain its normal condition. The toxin may affect a still more important function of the heart, that is contractility. This is shown by weakening of the heart, shortening of the first sound or its total disappearance. In some cases—more often in previously damaged hearts, contractility may be so severely affected as to cause death.

In pericarditis, the lesion may only affect a small area of the heart, or be scattered over the whole pericardium leading to roughening of its surface with the production of a diagnostic rub, going on to a greater or lesser amount of effusion. A large amount of effusion may embarrass the heart, but this fluid rarely requires to be removed. The subsequent adhesion may interfere with the heart contractions. The diagnosis of pericarditis is not an easy matter if a rub is not present.

The muffled character of the sound, increased cardiac dullness, the obliteration of the cardio hepatic angle. These signs may in part be represented by other heart lesions, such as dilatation, which may closely simulate a pericardial effusion. Pericardial effusion may press backward on the lung and produce dullness and bronchial breathing at the base of the left lung. It is sometimes mistaken for pneumonia or pleural effusion.

In endocarditis the lesions are subendothelial. The nodular swelling projecting into the cardiac

cavity becomes covered with fibrin from the blood, forming the vegetations which are to result in valvular lesions. These are most frequently seen in the mitral valve. When these lesions are small they are not likely to cause regurgitation or obstruction. As the nodules grow older, they become fibrous, contraction takes place, puckering of the cusps, permitting regurgitation. The cusps may adhere, causing stenosis.

In the early stages of carditis, the murmur is not due, usually, to the vegetations. They are generally small and can hardly be considered a sufficient cause for the murmur. The real cause is to be found in the heart muscle which is very frequently weakened or inflamed by the toxin circulating in the blood. These myocardial lesions are the cause of the early murmur because they weaken the sphincter muscle surrounding the left auriculo ventricular orifice. The contraction of this muscle is necessary to the closure of the valve—although the murmur in early cardiac disease may be due to want of tone in the sphincter muscle, there is nearly always present an inflammation of the valves which will produce the subsequent and permanent lesion.

The aortic valve is attacked much less frequently than the mitral, it having no sphincter muscle, and enlargement of the orifice does not occur. The pulmonic and tricuspid valve lesions are not common.

Myocarditis—It is probable that the myocardium is attacked whenever either of the other layers are affected. It may be involved alone.

Treatment—Unfortunately in too many cases the most careful preventative measures prove insufficient, because the heart is often affected at a very early stage. It is often the first or even the only part of the body to present physical signs; especially is this true in rheumatism. It will also be remembered that the myocardium is almost invariably involved when the heart is damaged. The first and most important point in treatment is rest. It must be carried out for a long period of time to be complete. The length of time varies with the individual case. It should not be less than four weeks. Sometimes two months may be necessary. If the pulse remains high, the indications are to keep the patient in bed until it becomes lowered. The erect position should be attained gradually. Severe exercise should not be allowed for several months. The diet should be light during the active part of the disease. Milk is the ideal food with the gradual addition of bread, butter, eggs, breakfast foods, fruit and vegetables. Any food which will increase arterial tension, should be avoided. Sali-

cylates do not appear to modify the course of the heart lesion. Iron in some forms is often beneficial, as anemia is almost always present. Syfferri iodid often does good. Where the heart becomes embarrassed, cafein and digitalis are sometimes indicated. An ice bag over the heart may give some comfort. If the pericardial effusion is large and believed to be embarrassing the organ, the needle may be indicated, but be absolutely sure that it is effusion, not dilatation, before aspiration. Patients rarely die with acute heart disease, unless it becomes a generalized infection called malignant myocarditis.

PARAFFIN TREATMENT OF WOUNDS

Great activity has developed in the war hospitals of Europe in the treatment of wounds that have come in so thoroughly infected that the saving of life and limb has been in large measure due to efficiency of treatment. The largest experience and the greatest skill and ability have been employed to secure results. The British Medical Journal presents methods employed by Rutherford Morison, Captain A. R. Short, and Colonel H. M. W. Gray. Rutherford Morison states:

These results have been achieved, firstly, by thorough cleaning of the wound and its surroundings, and then the use of antiseptics.

The antiseptics are one in twenty carbolic lotion for the skin, cleaning with alcohol and the use of an antiseptic paste for the wound.

The following directions are those given by Sergeant Hunter, dispenser to the Northumberland War Hospital, for the preparation of the paste:

Preparation of the paste (Bipp).

Iodoform 16 oz., bismuth subnitrate 8 oz., liquid paraffin 8 fl. oz., or a sufficient quantity. The powders are mixed together in a mortar, and the liquid paraffin incorporated. The quantity of liquid paraffin required varies according to the bulk of the powders, the bismuth in particular being liable to a considerable variation in bulk. A sufficient quantity should be added to form a paste. It is then advisable to rub down the paste, in small quantities at a time, on a slab with a spatula, to ensure freedom from grit and dry particles of powder.

Captain Short describes his methods as follows:

We have therefore been employing, for some months, the paste introduced by Captain Hey, after long research into many methods, consisting of brilliant green, boric acid, French chalk, and liquid paraffin. It presents the following advantages:

1. It is non-poisonous. The symptoms of boric acid poisoning—persistent vomiting and a peculiar rash—should be watched for, but although in many cases we have used very large quantities of the paste we have seen no ill effect result from its use.

2. It is painless.

3. In the great majority of cases it almost completely sterilizes the wound in three days, so that secondary suture can be performed even in large wounds complicated by bony injury. Small, completely excised wounds can be primarily sutured.

4. The wound need only be dressed about once in four days.

5. No permanent residue is left to interfere with immediate healing.

Before applying the paste the wound must be thoroughly opened up and excised, and any foreign bodies removed. If this is not possible—for example, in a shocked patient with multiple wounds or with a long deep track exposing important structures—we prefer to use Carrel's method. The paste is only to be applied if it can be applied completely. The wound ought to be dry and not bleeding, but a certain amount of oozing can be checked by a gauze plug (preferably paraffin gauze, which is easier to remove). The paste should be rubbed in thoroughly. It soon washes off the skin or gloves.

Colonel Gray offers the following:

The results of these observations enable one to state:

1. That liquid paraffin has, almost without exception, a very beneficial action on the walls of a wound and on the tissues adjacent to the wound. It prevents development of the symptoms of inflammation in these parts and will cause such symptoms to disappear rapidly if they are already present. The skin remains or becomes normal in appearance; redness and swelling do not develop or, if present, disappear. Pain is assuaged. Performance of function becomes easier, although, of course, this is frequently restrained by therapeutic agencies and is therefore not evident. Changes of dressings are comparatively painless.

TRAUMATIC GLYCOSURIA

The well known experiments of Brown-Sequard in producing glycosuria by puncturing the fourth ventricle, led Dr. Rathery, a Paris hospital physician, to observe the occurrence of glycosuria in wounded soldiers. In 1400 cases of gun-shot injuries, Dr. Rathery found 4.2 per cent. of glycosuria. No relation of the glycosuria to the gravity of the individual wound or location of the wound was observed. The quantity of sugar rarely exceeded 20 gm. in twenty-four hours. Its appearance was intermittent and in the two most protracted cases, the glycosuria lasted twenty-four days and six months. In no single case did progressive diabetes follow the traumatic glycosuria.

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa
T. B. THROCKMORTON, Business Manager.....Des Moines, Iowa

Publication Committee

T. B. THROCKMORTON, Secretary.....Des Moines, Iowa
W. L. BIERRING.....Des Moines, Iowa
F. W. PORTERFIELD.....Waterloo, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa
D. H. BOWEN.....Waukon, Iowa
T. E. POWERS.....Clarinda, Iowa

SUBSCRIPTION \$2.00 PER YEAR

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII April 15, 1918 No. 4

MEDICAL AND LEGISLATIVE COMMITTEES

Many surprising things have come to us since the war began. We believed that we lived in a world quite our own and had only an incidental interest in the affairs of European nations. We even felt a certain sympathy for their backwardness. It is quite recently indeed that we read some opinions expressed by railway men on the backward condition of European railroads, basing their opinion, no doubt, on the size of engines and cars, without thought of efficiency of operation. It is quite probable that these and other critics had not thought that in times of stress it would be necessary for the National Government to take over our railways to secure efficiency. We are now well on the way to an inventory of our own efficiency and to a healthy inquiry if we cannot consider and adopt to a greater degree European methods. Among other things, for many years European nations have had in operation various forms of industrial insurance and protection for the working classes. We were quite indifferent to this, comforting ourselves with the thought that these things were well enough for those countries but for a progressive country like ours we did not need them. When we had worn out man-power, we scrapped it and purchased new. There were, however, men of wider vision who could see that the conditions of living were nearly the same in all civilized countries, regardless of the form of government. It came about finally that the condition of the industrial classes was of the greatest importance

to the state and nation. All at once came a shock to the medical profession in the form of workmen's compensation, and close behind it, industrial health insurance with a fixing of fees quite unwelcome to the profession, and too late the medical profession found itself mobilized for public service and its individual rights and indemnities subject to state control. Then came a protest. In England where the rights of individuals are most respected, protests filled the air, then came threats, all of which were ineffective; then came negotiation with the formation of committees to represent the interests of the profession with a fair prospect of success. The medical profession of the United States followed very closely in the footsteps of the profession of England. It is true that state medical societies have formed committees, but mainly for the purpose of conveying protests and threats. This is unfortunate. The committees should be for the purpose of presenting the interests of the profession to executive and legislative officers; we should try negotiation.

This leads us to present some interesting statements in a recent number of the British Medical Journal.

It has unfortunately become almost a habit of a section of the profession to visit its displeasure not only on the commissioners but on the council of the British Medical Association, or particularly on any committee concerned in negotiation, and judging from a number of motions sent in for last weeks conference, it was expected that the Insurance Acts Committee would have an exciting time.

At the meeting of the committee, a better spirit than anticipated, prevailed, and the committee's work was endorsed, and the editorial goes on to say:

If the conference were to have no other effect it should show to government departments that the profession guided by the association is still a fighting force that must be reckoned within any legislation, and not, as recent events might seem to indicate, a disunited collection of private individuals each fighting for his own hand.

ARMY AND NAVY INSURANCE

The act recently passed by Congress providing for Army and Navy insurance, will meet the approval of the entire country and will be a milestone marking another step in establishing scientific methods of governmental administration. Nearly every generation has seen a war and has been conscious of a pension list which has been a subject of sentimental or political exploiting

from year to year and has had a deadening influence on patriotism in that it oftentimes unjustly casts a reflection on men who risked their lives and health in the defence of their country. This insurance law with the safeguards cast about it, will relieve the country from unjust exactments and at the same time provide the insured soldier with adequate protection without sacrificing self respect. The plan makes all army and navy officers and privates, as well as nurses, insurable without examination at the lowest old line term rates. The rate rises each year with age. Premiums are automatically deducted from pay each month. The limit of insurance is \$10,000 on one life. The insurance is paid, in case of death or disability, for 240 months in monthly installments. Such insurance will be allowed for the period of the war and not for longer than five years after its termination, but may before the expiration of this period, be converted without examination into other forms of insurance provided by the Bureau of War Risk, created by the Act. Thus a man aged twenty-five may carry \$5,000 insurance for \$3.30 a month payable in case of disability or death in monthly installments of \$28.75 for twenty years. Our soldiers and sailors, almost without exception, both at home and abroad, are contracting for this insurance, thus to a degree carrying their own pension load.

LIMITED PRACTICE LICENSES

The Bulletin of Federation of State Medical Boards makes some pertinent remarks in relation to the right to restrictive practice of medicine. There is a rather widespread notion among the people that practice limited to certain things is logical and proper and that almost any system should be granted legal rights if the practitioner confines himself to the methods set forth in his claims; that drugless healers of all kinds should be licensed as doctors if they do not use drugs or perform surgical operations. In certain communities, the idea of a specialist is a man whose knowledge of medicine is confined to a certain branch without any relation to pathology, diagnosis, or material facts in general medicine, a man who possesses knowledge of some extraordinary or perhaps some secret remedy for a particular disease. Recently it was advised to send to Chicago for a specialist in pneumonia. More intelligent people of course understand that a specialist is a man trained in general medicine but who for one reason or another spends years in study and investigation on a particular branch

of medicine. It will generally be found that the people who support the so-called specialist are the same that advocate limited licenses and see no harm in it, not realizing that a knowledge of the general principles of medicine, pathology, diagnosis, and the causes of disease, comes first, and that danger and disaster are sure to come if ignored. Dr. Baldy presents the same subject in an address published in the Pennsylvania Medical Journal for October, 1917.

The medical profession could contribute greatly in this matter by impressing upon the public mind the difference between the so-called specialist and so-called limited practitioner, and the general practitioner with expert training and knowledge in limited fields. We have tried to do this but we fear with imperfect success.

OPERATIONS FOR VARICOCELE

In a recent number of the Journal of the American Medical Association, Dr. J. C. Bloodgood of Johns Hopkins, warns against the frequent or indiscriminate operations for varicocele as has been practiced to some extent on young men enlisting for military service. The warning is opportune and should be heeded. Dr. Bloodgood has shown that this operation generally is not necessary but often harmful except perhaps in a very few cases. We have in our own practice observed many young men who suffered more in mind than in body in consequence of finding enlarged veins in the scrotum, and were quite willing, or even anxious to have an operation, having been advised this was or might become a sexual weakness, and was the cause of many imaginary sensations, dragging, or even pain in the back and loins. In earlier days we were led into operations we would not think of doing now. We were set right in this matter after examining 4314 young men seeking employment as brakemen, firemen, switchmen, and others engaged in equally strenuous labor. In this number, 4314, we found 315 with varicocele in more or less marked degree, most of them such as we had operated on earlier. These men were between twenty and thirty years of age. A few wore suspensory bandages, less because these were necessary than from the thought that they ought to wear them. As varicocele did not disqualify for railway service, none were operated on, or asked for, or were advised to have an operation. These observations covered a period of twenty years and not in a single instance have we found a disability arising from the presence of the varicocele or a suggestion for an operation.

Within the last few months we have examined about five hundred young men for selective military service, and found the percentage of varicocele about the same as above stated. Therefore in 4800 men between the ages of twenty and thirty-one, with 350 cases of varicocele, we have not found one man who apparently needed an operation. On the contrary we have examined a considerable number of young men who had been operated on by more enterprising surgeons—a few of whom we had earlier contributed—with results far less satisfactory than where we had let them alone, observing a course which relieved them of their fear.

In operations for hernia we have been careful not to disturb the veins in the cord more than was absolutely necessary. It is the policy of one of the railway companies I represent, to have all employes who develop hernia in the course of their employment, to bear the expense of an operation if they are willing to accept it. This rule has brought a considerable number of employes who had varicocele in connection with their hernias, under my hands. In only one case, a locomotive engineer, did I regret at the time not removing some of the veins, because for several weeks he complained of pain in the back which he believed was due to the enlarged veins. Investigation, however, showed that there were three consolidated lumbar vertebra, existing probably since childhood, and which condition had been overlooked at the time of operation, and the operating table not arranged to take off the strain, had left him with a painful back. After reassuring him and pointing out the fact that the pain in his back was due to other causes, and as the strain symptoms subsided, although the enlarged veins persisted, the pain disappeared and he has continued his employment without inconvenience.

INCREASE IN DUES

According to the Texas State Journal of Medicine, the following resolution was adopted at the Dallas meeting, May 10, 1917.

An assessment of five dollars per capita on the membership of component county societies is hereby made the annual dues of the association. Of this amount not more than two dollars shall be the subscription fee to the Texas State Journal of Medicine, and one dollar shall go to the medical defense fund.

It appears that before the reorganization fifteen years ago, the State Society dues were \$5.00 and were then reduced to \$2.00 with the effect of running behind during the last three years.

Nearly all the state medical societies have found it necessary to increase the dues, owing to the greater activities of these bodies in the last few years. The maintaining of high class medical journals and helping members in defending unjust malpractice suits, has added much to the expense of the societies, and with these must be considered the activities of the councilors in forwarding and maintaining organization, expenses of committees, etc. It has come to be recognized that the one way to represent and maintain the interests of the profession and to bring about legislation in the interest of public health and to render many of our public institutions more efficient, is to coordinate the activities of the profession of the state through the State Medical Society. In the past the American idea has been individualistic and the accomplishments have been slow and uncertain. During the past year or two we have been measuring ourselves by unusual standards and have found many points of weakness. We are being happily surprised at the facility with which we have remedied what we supposed were constitutional defects that made us different from other people. We have often been confronted with the argument that certain things might do in other countries but we were so different, our form of government forbade it. We are now seeing that much of this was nonsense. It may be granted that humanity and human ways may differ somewhat but among people of higher civilization there must be a similarity that even brings us into the family of nations, and we must do our part even if the way is strange and partly unknown to us.

The Pennsylvania Medical Journal is congratulating the State of Pennsylvania on standing third on the percentage of doctors enlisted for service in the war, furnishing up to September 15, 1917; 15.7—Nevada first with 18.9 and Arizona second with 18.3. We find Iowa thirty-seventh with 9 per cent; Minnesota 12.3 per cent.; Illinois, 10.9 per cent.; New York, 12 per cent.; Colorado, 7.3 per cent.; Arkansas, 5.1 per cent.; Wyoming, 4.8 per cent., and Texas, 9.3 per cent.

Iowa is making no comment upon the patriotism of her medical profession, although some of her cities have been pretty well drained, as Council Bluffs, Cedar Rapids, and Des Moines.

STUNNING THE FOE

Considerable allowance is made for headline writers struggling in the procrustean bed of the seven

or eight column strip. All the same may we not beg them to have pity upon our modesty and our common sense during these heroic days of war? One line in a contemporary reads, "U. S. Daring Stuns Foe." This refers to a brief dispatch relating how a handful of Americans, having concealed themselves in a shell hole in No Man's Land, waited there till day came and made a dash for the American trenches and reached them in safety. No shots were fired at them. Hence apparently the conclusion that Fritz was stunned by this remarkable preference of the Americans for the perils of a dash for their trenches to the dubious security of a shell hole between the lines.

We have great admiration for all our boys abroad. We know they are daring and resourceful, but we believe they would be a little nauseated at this headline. We believe that, after three years of facing the French poilu and the British Tommy, daring among his foes is not likely to stun the German soldier unless he expects Americans to be cowards, and we do not think he is that foolish. Bragging headlines are humiliating. They put fighting Americans in a false light. They make it appear we are a nation of braggarts, ignorant of the sublime courage our Allies and our enemies have shown on a vast scale. They give the unthinking false standards.

Our soldiers are going to earn our praise. Let us not cheapen it and ourselves by braggadocio, however well intended. The American soldier doesn't want it. America does not need it.—Chicago Tribune.

This seems to have been the idea of Michael O'Halloran, the newsboy, it saved time; started a good cry; was what every living soul wants. As Mickey said to Chaffner, "The biggest thing about ourselves; place it prominent in big black letters, where I get in quick and easy, and then put me in a scream. Give me a laugh in my call and I'll sell you out all by myself. Folks are spending millions per annum for the glad scream at night, they'll pay just the same morning, give them a chance."

THE STATE OF TEXAS

We are almost impelled to feel that the people of Texas are the choice people from every part of the Federal Union. The people of Texas by some chance elected a man bearing the name of Ferguson, Governor, who at once undertook to convert the State University into a part of a—we almost said, typical American political machine—but when the real people of Texas discovered what he was doing, resented it and pressed successful impeachment proceedings and saved the University. We trust that the same course would have followed in every state in the Union, but we are not sure of it.

A COUNTRY HOSPITAL PROBLEM PARTLY SOLVED

It is generally admitted that the conditions of practice in America are undergoing changes and that the results in the past will not be good enough in the future. Many young practitioners and many of middle age have no doubt learned how unfitted they were to render high grade service to our military forces and that a period of intensive training was necessary to fit them for a very grave responsibility—the care of the injured and the sick. We will see a profession with a viewpoint different from that of the near past even. House to house practice will be more distasteful than ever, and the results and the expense of home care will have an effect on the viewpoint of the patient and his family. We have on several occasions called attention to the advantages of a small, equipped and endowed hospital in communities remote from centers of population that might serve as the nursing homes serve small communities in England. In support of the suggestions we have previously made, we publish the following extract from the Canadian Medical Association Journal:

The Saskatchewan Municipal Hospital Act provides that two or more rural municipalities may co-operate with one or more urban centers in the establishment of a municipal hospital. Each municipality concerned has the power to levy a rate not exceeding two mills on the dollar, on all assessable property within its borders, for hospital purposes. The managing board is composed of representatives appointed by the councils of the cooperating municipalities, but not necessary members thereof, and is a body corporate, with powers governing such bodies.

Possibly the feature which has commended itself more especially to the prairie people in connection with the establishment of these rural hospitals, is the immense benefit which they are calculated to confer in maternity cases and emergency sickness. In the sparsely settled districts of the West, where the local medical men have to travel long distances, and in the almost total absence, over wide areas, of capable nursing assistance, women are enduring very serious hardships. Not only are they called upon to perform their ordinary household duties, but all too frequently the hard laborious work of the farm falls to their lot; this harsh physical striving has a very pernicious influence, especially during the later pre-natal period, immensely increasing the perils of maternity. It will be easily understood, therefore, how anxiously the prairie women are looking to this rural hospital movement for relief.

As an indication of the esteem in which these institutions are held where they have been established, the following quotation from a letter written by the

secretary-treasurer of one of the contributing municipalities may be of interest: "Before the inauguration of the present system (that is of free hospital accommodation) only a small percentage of maternity cases passed through the hospital, the women cheerfully taking a chance on their lives for the sake of helping the farm along. During the past five months nineteen women from this municipality have been in the hospital. We are saving the lives of our women at the small cost of three quarters of a cent per acre."

Broadly speaking, four rural municipalities require a hospital providing accommodation for twenty-five beds, besides quarters for the working staff. The cost of such an institution for building and equipment is estimated at from \$1,200 to \$1,500 per bed capacity, or between \$35,000 and \$40,000. Raised by debentures spread over a term of thirty years, and borne by the municipalities in proportion to their assessable value, this capital expenditure represents a very modest increase to the homesteader's taxes. Regarding maintenance, whilst it might be difficult to determine absolutely the cost to any one municipality, careful investigation suggests that from fifty-five to seventy patients might be expected from each rural municipality, with an average stay in hospital of fourteen days, at an estimated cost of \$2 a day per patient. This would mean that for capital cost, on thirty year debentures, bearing interest at 6 per cent., each rural municipality would have to provide less than \$1,000 per annum, whilst for maintenance, should the maximum estimate be realized and seventy patients receive treatment for fourteen days per patient, \$1,960 would be required, or a total cost to each municipality of something like \$2,960. As the Saskatchewan government, however, makes a grant of fifty cents per day for every patient in the hospital receiving treatment, \$490 would be received from this source, leaving the rural municipality to provide less than \$2,500 to meet its debentures, establish a depreciation fund, and pay the hospital fees of any of its rate-payers or their dependents. When it is remembered that the 297 rural municipalities in the province of Saskatchewan have an average assessable value of \$2,750,000 each, it will be seen that a one mill rate will yield at least \$2,750, or \$250 in excess of the total amount required as the proportion from any one municipality to finance the whole undertaking of building, equipping, and providing free hospital accommodation, and the best of skilled nursing attention for every rate-payer and his dependents who may require it, and that without involving any sense of obligation, as the system is one of cooperative municipal insurance.

A bonus of twenty-five dollars is also made to needy expectant mothers so that it will be seen that the government of Saskatchewan is striving manfully to solve one of the great pressing problems of the West; or is at least guiding the people wisely in their endeavor to arrive at a satisfactory solution of their own.

RESOLUTIONS

Whereas grave conditions exist as disclosed by the shocking venereal disease rate of nearly 400 per 1,000 in the new draft army reflecting a similar condition among all the male population of military age, primarily among the registrants,

Whereas the average army rate of venereal disease is but 137 per 1,000 as against the rate of 400 per 1,000 among those who are to make up our future armies, and the difference between these two rates amounting to 2,630,000 per 10,000,000 men clearly expresses the difference between military protective measures and control as against civil protective attempts,

Whereas the army record proves that this staggering and self-inflicting casualty list could be avoided by placing registrants under similar medical control to that observed in the army camps,

Whereas thousands of qualified physicians all over the country not in the field service, are available to so protect them, therefore be it

Resolved that the protection of the health of present and future registrants be considered and dealt with in the light of an urgent war emergency excluding, as much as possible, all conflicting authority and substituting therefor military regulation and control, calling for a swift military organization that would incorporate the services, if need be of every qualified physician wherever located, and direct them promptly to the task of averting disaster under unity of direction and protection of the enlisted physician under a central authority which military jurisdiction alone can assure,

Resolved that the members of the Scott County Medical Society urge upon the Secretary of War the prompt creation of a military medical organization, and that the members of said society herewith pledge their services to him thereunder,

Resolved that copies of these resolutions be transmitted to the Secretary of War and to the legislative representatives in Washington of this state and district as well as to the secretaries of the State Board of National Defense, of the State Medical Association and of the American Medical Association with the request to give them the largest possible publicity so that her local medical societies may take prompt and similar action and

Resolved that the duly selected delegates of this Society to the next meeting of the State Medical Association be instructed to urge the adoption of resolutions of similar import and substance.

Offered by Dr. Allen and adopted unanimously at a regular meeting held in Davenport, Iowa, March 5, 1918.

ROBT. E. JAMIESON,

Sec'y Scott County Medical Society.

The following committee was appointed to carry out the resolutions:

Wm. L. Allen, M.D., Local Exemption Board Division No. 2, Davenport, Iowa.

Kuno H. Struck, M.D., Local Exemption Board, Division No. 1, Davenport, Iowa.

John D. Cantwell, M.D., Local Exemption Board, Scott County, Iowa.

Wm. H. Rendleman, M.D., Medical Advisory Board.

E. M. Kingsbury, M.D., Examining physician Local Board No. 2.

W. A. Stoecks, M.D., City Physician.

NATIONAL CONFERENCE OF SOCIAL WORK

The Bulletin of this organization for February, 1918, publishes a preliminary program for its conference in Kansas City, May 15-22, 1918. A strong effort is being made to bring to the minds of the thinking people of this country, a full realization of the immense responsibilities resting upon this year and the near future years. It is felt that we have drifted along from year to year with only here and there an anxious thinking mind realizing what was almost sure to come in the social and economic evolution of the future. It is clearly true that the problems must be met through a study of conditions and a discussion of the methods of bringing an educated public conscience to bear to overcome many evils which cannot be reached by legislation. We have outlined some of the purposes of the conference.

Care of Convalescents; Medical Inspection of Schools, Public Health Nursing; Hospital Social Service; Nutrition; Health Centers; A National Program of Infant Welfare; National Salvage of the Handicapped; Preparing the Soldier Incapacitated by Nervous or Mental Diseases for Return to Civil Life; this last topic is the subject of discussion by Major Richard H. Hutchings, M. O. R. C., U. S. War Department, Washington, D. C. Types of After the War Problems by E. E. Southard, M. D., Director State Psychopathic Hospital, Boston; this same topic being also discussed by C. Macfie Campbell, M.D., Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore. The care of Feeble-Minded, Results and Significance of Mental Hygiene Work in the Army, this last by Dr. Frankwood E. Williams, Medical Director, National Committee for Mental Hygiene, New York City, are further topics of interest to the profession. Under Public Agencies and Institutions comes a discussion of private and state hospitals, sanitariums, almshouses and jails.

The battle at home against Infant Mortality and some reflections of Miss Julia Lathrop's efforts to save 100,000 babies this year out of the 300,000 whose lives needlessly have been lost each year is another topic that will find its way into the discussions. In short a marshalling of forces, social, industrial and medical as a second line of defense to give battle to the untoward conditions that make social and medical work necessary, will take place at the con-

ference, that will be second only to the efforts of our brave sons, brothers and friends battling against even greater problems "over there."

INJURIOUS EFFECTS OF MOVING PICTURES ON THE EYES

Dr. C. A. Bahn of New Orleans makes some observations on moving pictures on the eyes, published in the New Orleans Medical and Surgical Journal for October, 1917. After considering the subject from a scientific standpoint, he takes up the question of injurious effects on the eye. Dr. Bahn holds that if the position and distance are proper, and if the pictures are clear and well presented, no harm can come to a normal eye, unless too often presented. He offers as a safe limit, four sittings of one and a half hours each week. He advises that if the eyes become fatigued, one should leave the theater. One should not stare at one object alone, but to move the vision to different parts of the screen. Dr. Bahn states the moving pictures furnish a good test of vision, and that early ocular fatigue may be early evidence of defect of vision. He has been unable to discover a case of permanent injury to vision from moving pictures.

TRAINED NURSES AS ANESTHETISTS, AND THE PRACTICE OF MEDICINE

(Frank et al. vs. South et al., State Board of Health [Ky.], 194 S. W. R. 375)

The Court of Appeals of Kentucky reverses a judgment that was rendered in favor of the plaintiff members of the state board of health, the court being of the opinion that defendant Hatfield, a trained and licensed nurse, in the performance of services as an anesthetist for defendant Frank, a duly licensed physician and surgeon who limited his practice to surgery, was not engaged in the practice of medicine, within the meaning of the statute laws on that subject.

The court says it has never heretofore been called on to define the term "the practice of medicine" as defined in the present statute, or to determine what things were or were not within the meaning of that act. While the practice of medicine is one of the most noble and learned professions, it is apparent that such a construction ought not to be given to the statute which regulates the profession that the effect of it would be to invade the province of the professions of pharmacy, dentistry or trained nursing, all of which are professions which relate to the alleviation of the human family of sickness and bodily afflictions, and to make duties belonging to those professions also "the practice of medicine" within the meaning of the statute. Neither should such a construction be given to it as to deprive the people from all service, which could be rendered to them in

sickness and affliction, except gratuitous service, or else by licensed physicians, unless the legislature intended that such should be the result of the enactment of the statute.

As used in the present statute, the words "treatment of any human ailment or infirmity by any method" mean only to undertake the cure of any ailment or infirmity by some method, and it is clear that the legislative authority so understood it when it enacted the statute. To say that the term "practice of medicine" means the "treatment of any human ailment or infirmity by any method" is only an equivalent to saying that the practice of medicine shall be construed to be the attempt to effect the cure of such ailment by the application of some method, without regard to the method used. To do this it is necessary that the one undertaking the practice of medicine or to treat any human ailment or infirmity for the purpose of effecting a cure or to alleviate suffering arising from it by a method other than a treatment by medical agencies must necessarily do the things which are necessary to be done by one undertaking to practice medicine by medical agencies alone, and that is, he must make such a diagnosis of the symptoms of the ailment to determine what the ailment is. He must furthermore determine what the remedy should be and how it should be administered and when it should be administered, and then to administer the remedy, either in person or by directions to some one who is associated with the patient. It was contended that the language "the treatment of any human ailment or infirmity by any method" was enlarged by the language preceding it: "To treat the sick or injured or in any way discharge the duties usually performed by physicians, whether by medical, surgical or mechanical means;" but construing all of the language of the subsection together, it is evident that "or in any way discharge the duties usually performed by physicians" must necessarily mean the duties usually performed by physicians in the practice of medicine at the time of the enactment of the statute and as understood at that time. The things usually performed by physicians which are not the practice of medicine are not included or intended to be included in the act.

It is the duty of the surgeon who would undertake a surgical operation to make a diagnosis of the symptoms of the patient to determine his ailment and the remedy necessary, and, if he determines that an anesthetic is necessary for the performance of the operation, to determine what anesthetic is necessary and the manner of its administration, and to give the necessary directions for so doing and to supervise and direct its giving, and in the selection of an assistant to administer the anesthetic he should exercise the same degree of knowledge, skill and care as he is required by law to exercise in the performance of any part of the operation.—Journal of the American Medical Association.)

THE NEEDS OF THE MEDICAL SERVICE

Under the above caption, Lieut. Col. R. E. Noble, M.C., U. S. A., presented before the last meeting of the Southern Medical Association, a most admirable paper, which convincingly answers the many questions asked of the Department, and which have caused perplexing hours of thought with many doctors.

The communication appears in full in the December issue of the Southern Medical Journal and should be read by every doctor in this country.

In a previous paper by the same writer, presented prior to the time that the United States entered the world struggle, as in the above referred to communication, Col. Noble said: "On the medical profession rests a heavy responsibility, for with the medical profession rests the subject of medical preparedness."

This is a particularly impressive paragraph and pregnant with truth, and its meaning should sink deep into the heart of every doctor in America. What was a fact before we entered the struggle is more than a fact now, since we have joined forces with our Allies in a world war, and which will only be terminated by the success of our arms.

We have not a sufficient number of medical officers to care for the combatant and other forces now in training. With the new draft soon to be called and the possibility of the raising of an army of between five and ten million, as has been authoritatively foreshadowed, we would repeat "On the medical profession rests a heavy responsibility, for with the medical profession rests the subject of medical preparedness."

The responsibility of the medical profession of the United States and its importance in the successful outcome of the war cannot be too forcibly impressed upon every doctor who is mentally and physically fit and within the age limit, and they are urged to offer their services now.

That the surgeon-general should have an immense corps of medical reserve officers upon which to draw, enabling him to place the individual where he will be best fitted for the service is manifestly apparent. This will mean efficiency and by efficiency alone can the responsibility now resting upon the medical profession of this country be lessened.

Apply at once for a commission in the Medical Reserve Corps and thus relieve the responsibility which you owe to your country, your profession and yourself.

SALVARSAN SWINDLE UNCOVERED

The Boston Medical and Surgical Journal publishes a full account of a drug swindle which has become altogether too common in this country since the war commenced, which we publish in full.

The Department of Health of New York City has succeeded in unearthing a swindler who manufactured and marketed imitation neosalvarsan. The investigation, which began in June, came to a climax when Nicholas Clements was indicted. The prisoner was charged with grand larceny, forgery and conspiracy. According to Commissioner Emerson, a suspicious looking lot of neosalvarsan was encountered by Inspector Cohen of the Health Department's Bureau of Food and Drugs, of which Mr. Lucius P. Brown is director. The inspector investigated, and on June 20 succeeded in obtaining ten tubes of what purported to be neosalvarsan, but which in reality was nothing but a little common salt, to which some yellow coloring matter had been added. Through persistent search, a second lot of the product was obtained some time later from a Third avenue druggist. This lot was evidently identical with the first.

During the recent session of the American Medical Association held in New York City, the Department of Health displayed samples of imitation neosalvarsan which had been discovered by its inspectors. As in the other cases just mentioned, the lot there exhibited consisted merely of common salt with yellow coloring matter. How extensive this fraudulent traffic has been may be gauged from the fact that the maker of this product had ordered 50,000 aluminum containers, made in imitation of those in which the genuine article is supplied.

According to Mr. Hugh W. Taylor, chief of the Health Department, Division of Drug Inspection, the traffic in this neosalvarsan was facilitated by the European War. Because of the difficulty in obtaining their regular supplies of neosalvarsan, physicians have readily been induced to purchase this drug from speculators at an advanced price. This has rendered the substitution of a false product, put up in imitation of the original, a very simple matter. Mr. Taylor displayed a number of tubes of this product seized by his men, and it was almost impossible to distinguish the imitation from the genuine. The printing on the label and circular has evidently been reproduced photographically, for it appears to be identical with the original. The embossed cap on the aluminum container is also cleverly imitated. There is a slight difference in the appearance of the product, but even this difference is not sufficient to warn any but an expert or a physician who is constantly using this product.

The traffic in the product must have been very lucrative. The small tubes cannot have cost more than five or ten cents each to prepare, and they were sold to physicians for from \$5.50 to \$9.00 each, depending upon the urgency shown by the physician. The original product sells for \$4.50.

Through persistent detective work, Inspector Cohen finally traced the supply to an individual styling himself as "Doctor" Nicholas Clements of 2323 Belmont avenue, The Bronx, and he accordingly arrested Clements on the charge of violating

Section 116 of the Sanitary Code. On Wednesday of last week, the police finally captured the manufacturer of the lot of neosalvarsan exhibited by the Department of Health at the meeting of the American Medical Association. This individual, Arthur Thomasses, was charged with grand larceny and held in \$5,000 bail.

When Clements was arrested, the interesting discovery was made, that, not only was he manufacturing neosalvarsan, but that he was also engaged in selling false medical and dental diplomas.

The clues discovered were at once vigorously followed up. In this part of the investigation, Commissioner Augustus Downing, of the State Department of Education, rendered valuable assistance. His Department had suspected Clements for some time, but had been unsuccessful in securing sufficient facts to warrant his arrest. The first of the unlicensed "doctors" to be apprehended was a Dr. Lazinsky of East Ninth street, Manhattan. According to Lazinsky, Clements sold him a diploma which upon examination proved to be false, and assured him that he would have no trouble in practicing without a license because he, Clements, was an inspector of the New York State Medical Association. This apparently was true, for among Clements' papers seized by the police, is a framed letter dated October 31, 1902, and signed "James Taylor Lewis," as counsel for the New York State Medical Association, appointing him to this position.

"The results of this investigation," said Health Commissioner Emerson, "are of the greatest importance, for the work of these unscrupulous crooks threatened the life of thousands of people. It will be weeks before we can gain any idea of the extent of these frauds. In the case of Thomasses, one of the manufacturers of imitation neosalvarsan, the traffic apparently ran into thousands of dollars. One lot alone, now in the possession of the Department of Health, was valued at \$1,800, though, of course, it is not worth a cent. We have repeatedly warned physicians to beware of these false products, and in June we exhibited a lot of Thomasses' output at the meeting of the American Medical Association. Apparently as the result of our publicity, most of the recent sales were made to wholesale drug houses who wanted the drug for export. How much was thus sold outside of this city we shall never know. I have sent warning concerning this false product to health officials throughout the country and have asked the United States Public Health Service also to transmit this warning to the consular service."

IOWA MEDICAL MEN IN THE WAR

To Camp Beauregard, Alexandria, La., for duty, Lieut. Robert H. Lott, Waverly.

To Camp Dodge, for duty, Lieut. Hugh P. Barton, Davenport.

To Fort Oglethorpe, for instruction, Capt. Leo E. Evens, Waterloo.

To Fort Riley for instruction, Capt. Edward C. Ayres, Lorimor.

To Camp Custer, Battle Creek, Mich., for duty, from Fort Oglethorpe, Capt. Francis La Piana, Des Moines.

To Camp Devens, Ayer, Mass., as orthopedic surgeon, from Harvard Medical School, Lieut. Garnett S. Felt, New Providence.

To Chicago, Ill., Presbyterian Hospital, for instruction and on completion to Camp Taylor, from Fort Riley, Lieut. Louis B. Amick, Millersburg.

To Fort Douglas, Utah, as gas instructor, from Camp Doniphan, Capt. Albert E. Conrad, Decorah.

To Fort Riley, for instruction, Lieut. Carl Kail, Hartford.

To Hoboken, N. J., for duty, from Fort Riley, Capt. Alanson M. Pond, Dubuque.

To New York City, Neurological Institute, for instruction, from Fort Riley, Lieut. Elmer P. Weih, Clinton.

To Rockefeller Institute, for instruction, and on completion to Camp Lee, base hospital, Lieut. Erwin J. Gottsch, Le Mars.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, Lieut. Charles E. Moore, Newton.

To his home, and honorably discharged, Lieut. Robert G. Hinrichs, Palmer.

To Army Medical School, Washington, D. C., for instruction Lieuts. Edward C. Henry, Oil City; James K. Guthrie, Rockwell.

To Camp Cody, Deming, N. M., base hospital, Lieut. Dan W. Shine, Oelwein; Lieuts. Francis J. Hombach, Council Bluffs; James E. Dyson, Manilla; George E. Hermance, Marshalltown.

To Camp Custer, Battle Creek, Mich., for duty, from Fort Riley, Lieuts. George S. Gilpin, Des Moines; Oliver E. McGrew, Grandview.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. James A. Porter, Hedrick.

To Camp John Wise, San Antonio, Texas, for duty, from Fort Riley, Lieut. Ernest D. Cook, Maquoketa.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Rockefeller Institute, Capt. George A. Plummer, Cresco.

To Chicago, Northwestern University Dental School, for instruction, Lieut. George R. Narrley, Keokuk.

To Danville, N. Y., for duty, from Fort Riley, Lieut. Milton A. Given, Des Moines.

To Fort Oglethorpe, for instruction, Capt. George R. Hill, Charter Oak; Lieuts. William L. Griffin, Charles City; James E. Edgington, Washington.

To Fort Riley, for instruction, Capt. Prince E. Sawyer, Sioux City.

Capt. Thomas A. Burcham, of Des Moines, now in France, has been promoted to the rank of major. Major Burcham together with Major Conkling have been investigating sanitation conditions on the British front.

Word has been received of the safe arrival of Unit R., "somewhere in France."

Advices received note the safe arrival "somewhere in France" of Dr. Ira N. Crow, of Marengo. Dr. E. J. Wehman, of Burlington, and Capt. L. A. Hammer, of Oskaloosa.

Dr. J. N. Hoit, of Rockwell City, is with an ambulance corps in France, and his son Clarence, is with General Pershing's army. The father and son were stationed forty miles apart, but some weeks elapsed before they could meet one another.

LIEUTENANT C. N. O. LIER DECORATED

Lieutenant C. N. O. Lier of the Medical Corps has been awarded the Croix de Guerre for gallant conduct in the line of duty in battle at the war front in France.

Dr. Lier is a graduate from Drake University Medical School, and at one time instructor in the institution. When the war was declared, Dr. Lier was practicing his profession in Des Moines, and early enlisted in the medical service.

BOOK REVIEWS

DISEASES OF THE DIGESTIVE ORGANS WITH SPECIAL REFERENCE TO THEIR DIAGNOSIS AND TREATMENT

By Charles D. Aaron, Sc.D., M.D., Professor of Gastroenterology in the Detroit College of Medicine and Surgery; Consulting Gastroenterologist to Harper Hospital. Second Edition Thoroughly Revised. Illustrated With 156 Engravings, 48 Roentgenograms and 9 Colored Plates. Lea & Febiger, Philadelphia and New York. Price \$7.00.

The book commences with a chapter on the physiology of digestion followed by four chapters on the examination of stomach and intestinal contents by the various well established laboratory methods. Some changes and additions have been made since the publication of the first edition three years ago, particularly in the examination of duodenal contents, one chapter added. The chapter on Roentgen-Ray Examination has not been materially changed. Two chapters are devoted to diet in stomach and intestinal diseases and constitute an important part of the work. It is unfortunately true that many practitioners have difficulty in prescribing a logical course of diet for their stomach and intestine cases, and a greater trouble in having directions followed, partly from an uncertainty on the part of the physician, who it may be, has not studied the subject carefully.

Lavage of the stomach, its indications and contraindications and its technic are considered in chapter nine. Massage and electricity receives consideration in a short chapter. Treatment of diseases of the intestines through the rectum; irrigation, enemas and proctolysis are not as well understood or effi-

cient as they should be and are left too often to an indifferently trained nurse without sufficient watchfulness on the part of the physician, with disappointing results.

The author gives considerable space to hydrotherapeutics in stomach and intestinal diseases—which has a material value—and to assist the practitioner, a careful study of the subject has been made, and the different mineral waters of America given consideration.

Upon the basis of the fundamental facts and theories presented in the first twelve chapters, the medical treatment of the various diseases of the digestive system are presented. The clinical and physical diagnosis aided by laboratory investigations are made the basis of logical treatment.

Since the publication of the first edition less than three years ago, some new work has appeared and some that was in a tentative stage then, has been worked out to some degree of certainty at least, which has made it necessary to add about 120 pages.

The table of contents is very complete and together with the admirable index, renders it easy to find what one is looking for.

CLINICAL CARDIOLOGY

Lehan Neuhoof, B.S., M.D. The Mac-Millan Co., 1917, \$4.00.

As the author states in his preface, this book includes the modern graphic as well as the usual bedside methods of examination of the heart. He emphasizes the fact that instrumental methods are frequently subsidiary. The later chapters are devoted to the purely clinical side, the earlier chapters to polygraphy, electrocardiography and orthodiascopy.

Further therapy is not neglected, and the question of diet, exercise and the general management of heart disease are discussed in detail. It is capitally illustrated. This book should prove of considerable use to the student of cardiac disease and should be in every up-to-date internist's library. Howard.

A CLINICAL TREATISE ON DISEASES OF THE HEART FOR THE GENERAL PRACTITIONER

Edward E. Cornwall, PhB., M.D., New York. Rebman Co., 1917.

This book is a short outline of the symptoms and physical signs of the commoner cardiac conditions, including the arrhythmias. A short section is also devoted to the blood-pressure.

A second part of the book describes briefly the individual diseases, pericarditis, acute endocarditis, chronic endocarditis, including its various valvular lesions, myocarditis, and angina pectoris.

A short section is devoted to general and special therapeutics. The book seems more serviceable to a senior medical student than to a general practitioner. Howard.

INTERNATIONAL CLINICS

A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Edited by H. R. M. Landis, M.D., Volume Four, Twenty-seventh Series, 1917. J. B. Lippincott Company.

The first contribution is by Dr. Fred Albee—Clinics in Military Bone Surgery. Under this head several reconstructive procedures are outlined, having for their purpose a more secure use of the limb. This clinic is followed by an interesting orthopedic clinic by Dr. G. G. Davis. In addition to a variety of general clinics, there is one by Dr. Bevan on Fractures, and one by Dr. Charles Green Cumston on Injuries of the Cranium and Brain in Warfare. Dr. Julius Grinker considers Multiple Neuritis, a subject always interesting on account of questions of diagnosis and on account of its influence on the muscles and prognosis.

Under the head of Medicine is an interesting and rather extended study of Brain Tumor by Dr. Beverly B. Tucker of the University of Virginia.

Dr. Neustaedter of New York presents a study on Mental Backwardness in Children.

INTERNATIONAL CLINICS

A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, etc. Edited by H. R. M. Landis, M.D., Published by J. B. Lippincott Company, Philadelphia and London. Price \$2.00.

This is Volume III, 27th series, 1917, and contains six classes of subjects: First a series of clinics by foremost workers in different departments of clinical work. Second, Address on Medicine; the first of which is A Study of Arterial Blood-Pressures, with Reference to their Clinical Values, by Thomas E. Satterthwaite, M.D., New York. An interesting paper appears in this section by E. Poiree, M.D., of Nantes, France, on the Association of Cirrhosis and Cancer of the Liver. Under the head of Treatment are notes on tetanus in the war of 1914, and on the treatment of malignant diphtheria.

In the Public Health Section is a paper on Food Inspection in Cincinnati by Dr. J. H. Landis. Fifth Neurology—"Neurasthenia Before and After the War" by Professor James J. Walsh of New York; "Constitutional Psychopathy and its Conflict with Social Conditions" by Dr. John E. Lind.

Under Section on Surgery appears a number of papers on reconstructive surgery, shoulder-joint fractures and nerve injuries, etc. There is also an interesting paper on Hermaphroditism.

PHYSICAL DIAGNOSIS

By W. D. Rose, M.D., Lecturer on Physical Diagnosis and Associate Professor of Medicine in the Medical Department of the

University of Arkansas. Four Hundred Ninety-nine Pages With 294 Illustrations. Price \$4.00 C. V. Mosby Company, St. Louis, 1917.

This useful book is apparently intended for the use of the student of medicine and the general practitioner who engaged in arduous and time absorbing work, finds it difficult to refresh his memory by reading the larger works. The author covers a large field of physical diagnosis in its clinical relations.

TALKS ON OBSTETRICS

By Rae Thornton LaVake, M.D., Instructor in Obstetrics and Gynecology, University of Minnesota, Obstetrician in Charge of the Out-Patient Obstetric Department of the University of Minnesota, etc. C. V. Mosby Company, St. Louis, Mo. Price \$1.00.

This book is intended as an introduction to the study of obstetrics on the part of the student of medicine. It is written in the form of familiar talks while waiting; on sepsis, toxemias, hemorrhages, forceps presentations, etc. It is written in an interesting manner and at the same time instructive as an introduction to the larger works.

LEDERLE'S POLLEN "VACCINE" NOT ADMITTED TO N. N. R.

(Report of the Council on Pharmacy and Chemistry)

Under the designation "Pollen Vaccine" the Lederle Antitoxin Laboratories sell a pollen protein extract "For Prophylaxis and Treatment of Hay Fever." The product is said to be made from a mixture of "equal parts by weight of the pollens of timothy, redtop, June grass, orchard grass, sorrel dock, daisy, maize, ragweed and goldenrod."

To avoid confusion and in the interest of rational nomenclature, the Council has decided that henceforward in New and Non-official Remedies the term "vaccine" shall be restricted to products which contain living or dead microorganisms. Under this provision the Council does not accept a preparation in the name of which the term "vaccine" is incorrectly used.

Lederle's Pollen "Vaccine" is a solution of plant proteins and its designation as a "vaccine" makes it inadmissible to New and Non-official Remedies.

In consideration of the essentially experimental status of the use of pollen preparations for the prevention and treatment of "hay-fever," such products should be as simple as possible. The Council therefore has decided that, in accordance with the principle of Rule 10, pollen protein preparations, prepared from the pollen of two or more different species of plants, shall be accepted only if there is evidence that the given combination is rational. While there is some evidence to indicate that a person may be sensitive to the pollen of different species of grasses

ripening simultaneously or to both ragweed and goldenrod, sensitiveness to both general groups is rare. The Lederle preparation is claimed to contain the pollen of seven different plants, cross sensitiveness to which has not been established, and in this respect the preparation is held to be irrational.

The preceding objections were sent to the Lederle Antitoxin Laboratories. They were urged to modify the name and composition of their product to meet these requirements. The firm replied that it was not prepared to make the suggested changes; accordingly the Council voted that Lederle's Pollen "Vaccine" be not admitted to New and Non-official Remedies.

NEUTRAL SODIUM SOAP

For some time Dr. Alexis Carrel has been using, in the War Demonstration Hospital of the Rockefeller Institute, for the cleansing of wounds a liquid sodium soap—a neutral sodium oleate. This has been employed with most satisfactory results.

This soap is used to scrub out an infected wound. A little of it is applied to a pledget of cotton, held with a dressing forceps, and the wound scrubbed with it, more soap applied to the cotton from time to time until there is a good lather. The wound is scrubbed in this way from the center to the periphery, the soap finally being washed away with water, after which the indicated antiseptic is applied, as, for instance, Chlorazene Surgical Cream.

Neutral Sodium Soap, prepared to meet Doctor Carrel's indications, has been placed on the market by The Abbott Laboratories, Chicago, and is now offered to the medical profession.

During August the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Calco Chemical Company:

Betanaphthol Benzoate-Calco.

The Diarsenol Company Limited:

Neodiarsenol ampoules, 0.15 gm.; 0.3 gm.; 0.45 gm.; 0.6 gm.; 0.75 gm.; 0.9 gm.

Fairchild Bros. and Foster:

Gastron.

Hoffman-LaRoche Chemical Works:

Tyramine-Roche.

Maltbie Chemical Company:

Calcreose, calcreose solution, calcreose tablets, 4 grains.

During September the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

The Abbott Laboratories:

Chlorinated eucalyptol, Dakin; chlorinated paraffin oil, Dakin; dichloramine-T, Abbott; halazone, Abbott; halazone tablets, Abbott.

General Laboratories:

Hyclorite.

Schering and Glatz:

Camiofen ointment.

During October the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

General Laboratories:

Arsenobenzol (Dermatological Research Laboratories, Philadelphia Polyclinic).

Jno. T. Milliken & Co.:

Acetylsalicylic Acid Capsules—Milliken.

Acetylsalicylic Acid Tablets—Milliken.

Monsanto Chemical Works:

Acetylsalicylic Acid (Aspirin), Monsanto.

Schering and Glatz:

Atophan, S. & G.

E. R. Squibb and Sons:

Silver Protein—Squibb.

Standard Oil Company of Ind:

Stanolind Surgical Wax.

535 N. Dearborn St., Chicago, Nov. 8, 1917.

Dear Doctor:

In the monthly letter detailing the Council's consideration of products for the month of October, the product Arsenobenzol (Dermatological Research Laboratories, Philadelphia Polyclinic) was listed as being sold by the "General Laboratories." This was an error; the product is sold not by the "General Laboratories," but by the "General Drug Company, New York."

It is regretted that this error was made.

Yours truly,

W. A. Puckner, Sec'y,

COUNCIL ON PHARMACY AND CHEM.

During December the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Calco Chemical Company:

Chloramine-B (Calco).

Chloramine-T (Calco).

Dichloramine-T (Calco).

Halazone (Calco).

Dermatological Research Laboratories, Philadelphia Polyclinic:

Arsenobenzol (Dermatological Research Laboratories), 0.4 gm. Ampules.

Farbwerke-Hoechst Co.:

Novocaine.

A. Klipstein and Co.:

Sterile Solution Coagulen-Ciba (3 per cent.) 1.5 cc. Ampoules.

Sterile Solution Coagulen-Ciba (3 per cent.) 20 cc. Ampoules.

Tablets Coagulen-Ciba, 0.5 gm.

During January the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

The Abbott Laboratories:

Chlorazene Surgical Powder.

Calco Chemical Company:

Betanaphthyl Salicylate (Calco).

Merck and Company:

Acetylsalicylic Acid-Merck.

COMING MEETINGS

American Medical Association

The Chicago Session—Committee on Arrangements

The Local Committee on Arrangements for the Annual Session of 1918 to be held in Chicago, June 10-14, is actively engaged in perfecting plans for the comfort and entertainment of the Fellows of the Association and their guests.

All correspondence with the Local Committee on Arrangements or with any of its subcommittees should be addressed to 25 East Washington Street, Chicago.

Clinics

There will be a series of clinics for the Fellows of the Association on Thursday, Friday and Saturday, June 6, 7 and 8, and on Monday and Tuesday, June 10 and 11.

These clinics will cover every phase of medicine, surgery and specialties, and will be conducted by our greatest clinicians.

Alumni and Section Dinners

Alumni and section dinners will be held on Wednesday evening from 6 to 8 o'clock. The chairman of the subcommittee on alumni and section entertainment, Dr. J. H. Stowell, announces that his committee is cooperating with officers of alumni associations in arranging for reunions.

Hotel Headquarters

The following hotels have been tentatively designated as general and section headquarters:

General Headquarters, Hotel Sherman.

Practice of Medicine, Hotel Morrison.

Surgery, General and Abdominal; Pharmacology and Therapeutics; Pathology and Physiology; Preventive Medicine and Public Health; Genito-Urinary, and Gastro-Enterology and Proctology, Auditorium Hotel.

Obstetrics, Gynecology and Abdominal Surgery, Diseases of Children; Stomatology; Orthopedic Surgery, Congress Hotel.

Ophthalmology, Laryngology, Otology and Rhinology, Hotel La Salle.

Nervous and Mental Diseases, and Dermatology, Blackstone Hotel.

THE 1918 DUES QUESTION

This issue of the Journal contains the official program of the coming meeting at Fort Dodge, May 8, 9 and 10, and it is to be hoped that the efforts put forth to make the meeting a success will not have been in vain.

The war has made its insistent demands upon the medical profession. Many members who have always been present at past meetings, will not be privileged to meet with us this year. The dues of many of these members, now engaged in the service of our government, have been freely, and we believe rightly, paid by the local county medical societies.

The dues problem is one which is of vital interest to the welfare of the State Society. Only those who are intimately connected with the management of society affairs can well appreciate the necessity of prompt payment and collection of dues. The past year has been a perplexing and trying one on all people with no exception to doctors. The county secretaries, as a rule, have been very faithful in the execution of their trust, and have seen to it that the local dues have been collected and sent to the secretary of the State Society with a fair degree of promptness. Allowing for all reasonable excuses, nevertheless, at this late hour—some sixty odd days past the time when members should have paid their dues to maintain standing in the Society—several counties as yet have failed to send in any dues, or even to respond to letters sent from the state secretary's office.

The question of allowing the payment and the collection of dues to drag along until a propitious time arrives is a pernicious one. According to our knowledge, in some instances, the fault lies with individual members, in others, with the secretary whom the local society has chosen to act for them. Certainly the only plausible remedy is for a closer co-operation between members and their secretary.

A more recent phase of the dues problem now confronts the Society and is one to be heeded. In a letter from the secretary of the American Medical Association, the statement is made that at the coming meeting of the association to be held in Chicago, June 10-14, a reapportionment of the delegates among the constituent state associations will be made in 1919 "in proportion to the membership of each constituent state association on April first as shown by the certificates of membership submitted by the secretaries of the constituent associations." This means that unless the dues are sent in more promptly, and there are less of the eleventh hour reinstating of members who are in suspension on account of failure to pay their dues promptly and in season, there will, in all probability, be a readjustment in the delegates sent to represent the Iowa State Medical Society at the national meetings, and Iowa may be obliged to reduce her quota of delegates, all because of the fact that the question of

the prompt payment of dues has received so little attention by some members and by some county secretaries.

Let each individual member see to it that his dues are paid, and each county secretary remember that as long as he is in office, he is, indeed, "his brother's keeper," and that more promptness as to time, patience and perseverance will accomplish all things.

OUR COMMERCIAL EXHIBITORS

It has been some time since the Commercial Exhibitors at the Annual Session have been afforded such an excellent location as obtains at the coming Sixty-seventh Session at Ft. Dodge.

Space on the same floor as the meeting places of the session has been secured for the commercial exhibit. The lighting facilities are of the best and with the desirable location, everything promises success to the exhibitors, most of whom have dis-regularly with us.

At the time of going to press the following firms had secured space.

Coors Malted Milk Co., Golden, Colo.
Geneva Optical Co., Des Moines.
Horlick's Malted Milk Co., Racine.
Lewis X-ray Co., Des Moines.
Merry Optical Co., Des Moines.
C. V. Mosby Co., St. Louis.
Chas. H. Phillips Chemical Co., New York City.
Standard X-ray Co., Chicago.
Standard Chemical Co., Des Moines.
Sharp & Smith, Chicago.
Willows Maternity Hospital, Kansas City.

SOCIETY PROCEEDINGS

The Appanoose County Medical Society met March 26 at the society assembly room at St. Joseph Hospital, Centerville. The program was:

The Care of the Pregnant Woman up to Time of Delivery—C. P. Bowen.

The Management of Normal Labor—C. S. Hickman.

The Management of Abnormal Labor—C. P. Tillmont.

Cinematographs

The Technic of Obstetrics, Normal and Abnormal as Conducted in the New York Lying-in Hospital—J. W. Markoe, New York.

There were twenty-four in attendance, and a very interesting meeting was held. The discussion was participated in by practically every doctor present and the subject being obstetrics was naturally a very popular one and of general interest.

The society has been subscribing for two reels of moving pictures along scientific lines for the past several months, and the meetings range in attendance from eighteen to forty.

The society has its own assembly room in the new St. Joseph Hospital, owns a moving picture machine,

lantern slide lantern, x-ray plate demonstrator, skeleton on stand and other suitable apparatus for demonstration, illustration and production of any scientific topic or clinical case.

C. S. J.

The regular meeting of the Clinton County Medical Society was held March 4 at the Lafayette Hotel, Clinton. Following the supper and business session Dr. W. R. Whiteis, of the State University, who was the guest on this occasion, presented a paper on The Diagnosis of Female Pelvic Disorders. A general discussion was participated in by those present.

Accompanying Dr. Whiteis was Dr. John Mansfield of Clinton, who is an interne at the State University hospital and assistant to Dr. Whiteis.

At the March 12 meeting of the Dubuque County Medical Society held at Dubuque, Dr. Herman L. Kretschmer, of Chicago, read a paper on Personal Experiences with Kidney Stone Surgery. His paper dealt with the subject of kidney stone in a most comprehensive way, illustrating the points made by stereopticon illustrations. The diagnosis was confirmed in most every case by the operative findings and this made his paper extremely practicable and valuable.

Following this paper was a general discussion under the heading of Personal Experiences with the Treatment of other Pathological Conditions of the Urinary Tract.

Dr. J. C. Hancock reported a case of Nephrectomy for tuberculosis of the lower pole of the left kidney, which a roentgenologist had erroneously diagnosed as a kidney stone.

Dr. J. H. Schrup showed the foreign bodies from two bladder cases which had been passed spontaneously through the urethra after repeated bladder irrigations. An ulcerated bladder condition which yielded readily to ag. No. 3 applications was cited. New bladder instruments and the technique of par-asacral anesthesia were shown. He also reported a case of so-called Essential Hæmaturia, which yielded readily, at least for the time being, to Calcium Lactate.

It was reported that the petitions in behalf of the Owen-Dyer bill, as suggested by a circular letter of the A. M. A., had been filled out with 75 to 100 signers each and sent to the proper representatives.

J. H. S.

Johnson County Medical Society met in regular session at Iowa City March 6, with C. P. Howard presiding.

J. C. Kessler presented a case of blastomycosis; in a white male, age thirty-five, occupation farmer. Lesions on outer and lower aspect of right eye with semi-circular peripheral extension on to nose and nasal side of upper eye lid with partial destruction of lower eye lid. The lesion started as an innocent papule, increased peripherally, forming a tumor as large as a ten cent piece. It then spread peri-

pherly, forming a papillomatous growth, with minute abscesses between the papillæ. A histological section shows the following changes: two papillary layers with minute abscesses, mast cells, granular condition in the corium, tuberculoid tumor formations, and the presence of the fungi, blastomyces, in the tissue and pus. The treatment consists of the following; increasing doses of potassium iodide—as long as tolerated. Locally tr. iodide and x-ray exposures, with good results.

Dr. Geo. C. Albright, in a brief review of an interesting article by Isaac H. Jones, Philadelphia, appearing in the J. A. M. A., 69:1607, on "The Ear and Aviation," said, "The aviator must have perfect internal ears because he cannot depend upon his muscle sense, being in an unstable machine, nor on his eyes because often he cannot see. Accidents to aviators before the institution of vestibular tests, may have been due to unknown ear defects. An aviator who has perfectly normal ears may have accidents, due to concussion of the internal ear produced by the deafening roar of the engine or by sudden changes of atmospheric pressure. To avoid unsuspected ear defects the ear tests must be complete, rigid, and uniform. Both tests and examiners have been standardized. The standards and tests were prescribed by the U. S. Government, May, 1917. Vision, hearing, and vestibular function must be normal. The original article gives the tests verbatim. The principal test is the rotation test with observance of nystagmus, past-pointing, and falling reactions. This divides the applicants into three classes: (1) obviously fit, (2) obviously unfit, (3) border line. The border line cases are further examined by the caloric method. The higher standards in the United States will serve to produce the most capable and finest aviation corps in the world."

Dr. H. J. Prentiss demonstrated a unique anatomical specimen; a skull in which the anterior nares was entirely absent.

In a paper on the Various Poison Gases in Modern Warfare, Dr. F. L. Love gave the early history of "gas" as used in warfare, dating back to 431 B. C. First modern use was April 22, 1915, on the Western front. He named a number of gases used and their effects, also the methods used in applying them to warfare. The effects of these gases were touched upon and the statement made that the treatment outside of quiet and fresh air with opiates was practically nil. Dr. Love's paper brought out much of the information in the "gas" courses as given the men now in training for over seas service.

In his paper, D. C. Brockman, Ottumwa, said that the most important thing about Tumors of the Jaw is the difficulty in making a diagnosis with the result that cases are neglected until a mutilating and possibly hopeless operation is necessary for a tumor which was innocent at an earlier period. Dr. Brockman dwelt especially on epulis, a tumor innocent at the beginning, but very prone to become malignant, and even hopeless. If vascular in appearance, a

frozen section must be made at once, the character and extent of the operation to be determined by the microscopic findings. A fibrous epulis is a benign tumor, easily cured by simple removal. In all other varieties safety demands a radical operation in most cases. We have as yet no cure for carcinomatous tumors of the jaw, but we hope that radium may change our present unfavorable prognosis. Dentigenous cysts, bone cysts, and unerupted teeth are all easily diagnosed by means of the x-ray and easily cured by the employment of ordinary surgical procedures.

Dr. Henry Albert, discussing Dr. Brockman's paper, demonstrated several specimens, one of which was a specimen of an endothelial giant cell sarcoma, a very common form of tumor growing in connection with the gums. The specimen was from a boy seven years old, whose lower central incisors had been injured. Ten days later an enlargement appeared just inside the injured teeth. Within ten days, this little tumor attained the size of a cherry, was very vascular, and bled readily. The four incisor teeth, with the part of the jaw containing the tooth sockets, were removed, and mounted in this very unique manner by Dr. Fenton, in a plaster model of all the remaining teeth. Another specimen was a round celled sarcoma of the jaw, which developed very soon after one of the molar teeth had been extracted. One-half of the lower jaw was removed.

In discussing Dr. Brockman's paper Dr. Leon Branson said that dentists meet with epulis in its earliest formation. He drew attention to the fact that gum tissue in children has a great tendency to develop in proximal cavities, this being especially true in the region of the bicuspid and molars; that its growth is rapid and that it soon reaches the cutting edge where it may be exposed to constant irritation with resultant malignancy. Prompt attention either by ligation and cauterization, or cavity packing and cauterization, soon overcomes the difficulty.

L. W. L.

The Plymouth County Medical Society met at the Commercial Club rooms, Le Mars, at 8 o'clock p. m., April 2.

The meeting was called to order by President W. H. Heller. After the business session, several interesting clinical cases were reviewed, among which was one of fatal intestinal obstruction, of unknown origin, at the valve of Bauhin, in a child one year old, by Dr. W. T. Shepard; another, of a systolic blood-pressure of 245 mm. hg. in a young man, twenty-three years old and who seemed to be in good health, by Dr. James M. Fettes.

The following papers were then read:

The Diagnosis of Croupous Pneumonia by Dr. J. L. Reeves, and A Few Remarks on Therapeutics by Dr. A. Naffziger. This paper was read by Dr. Shepard on account of the fact that Dr. Naffziger

had enlisted for service in the Army and is now at Fort Riley.

A committee was appointed by the chair to formulate a plan for taking care of the practices of doctors going to the war; committee to report at the next meeting.

A. H. J.

The regular March meeting of the Polk County Medical Society was held Tuesday evening, the 26th at the Chamberlain at 8 p. m. Several guests were present at this meeting, among whom were Dr. W. C. Witte, of the U. S. Public Health Department, Lieut. Beckwith, of the Law Enforcement Department under the Fosdick Commission, and Hon. H. W. Byers and Hon. George Cosson of Des Moines.

Lieut. Beckwith spoke especially on Law Enforcement in the Suppression of Venereal Disease. The program as announced was carried out as follows:

Venesection for Meningitis—Dr. A. G. Field.

Discussion of Measures to Prevent Venereal Diseases in Extra-Cantonment Areas—Dr. W. C. Witte.

Health Laws of the City and State—Hon. H. W. Byers.

Professional Confidences—Dr. Lewis Schooler.

Discussion opened by—Hon. George Cosson.

The annual meeting of the Story County Medical Society was held in the Commercial Club room at Ames, March 18.

Dr. Bush Houston, of Nevada, read a paper on Infection of the Joints: Diagnosis and Treatment.

Miss Hartley, one of the nurses connected with the Iowa State Tuberculosis Association, talked along the line of the duty of the nurse in looking after school children in the towns and rural districts.

The county superintendent of schools with a committee was present. A resolution was passed by the society endorsing the plan as outlined by the State Tuberculosis Association.

A telegram was received by the society from Dr. B. G. Dyer now captain stationed at Camp Sherman, Ohio. "Greetings to the Story County Medical Society. May you live long and prosper. Am in one of the best nose and throat hospitals in the army."

The officers elected are: President, Jennie G. Ghrist, Ames; vice-president, Earl Rice, Ames; secretary-treasurer, Bush Houston, Nevada.

MARRIAGES

Dr. William Stevenson, of Des Moines, to Miss Francis Blanchard, of Chariton, at Des Moines, March 23.

BIRTHS

Dr. and Mrs. C. C. Griffin, Vinton, March 15, a son.

Dr. and Mrs. J. C. Shellito, Independence, March 9, a son.

DEATHS

Dr. Azuba Doty King, Des Moines, was born in Westfield, Penn. in 1836. Five years after her marriage in 1857, her husband died leaving her with two children, one of whom was an invalid. She removed to Iowa City where she studied medicine and graduated from the State University of Iowa College of Medicine in 1876 at the age of forty years. Following her graduation, Dr. King came to Des Moines where she was one of two women physicians—a woman doctor at that time was considered something very unusual—and continued in practice until



1905. During her active practice she kept abreast of the profession doing post graduate work in both Chicago and New York City. She was one of the foremost pioneer women physicians of Iowa.

Dr. King and Dr. Edith Gould Fosness, for many years, were the only women physicians in Des Moines. Their reputation for professional ability coupled with their unusual fine characteristics paved the way for the present women physicians of Des Moines. A pioneer in the medical profession, Dr. King was held in the highest esteem and respect by her professional colleagues. One of the highest tributes paid her was that she belonged to the home loving and home making type of women. The women members of the profession of today are indebted to such a noble woman.

She was a life member of the Iowa State and Polk County Medical Societies; a charter member of the State Society Iowa Medical Women and the Professional Women's League; was connected with the Home for Friendless Children, and other charitable organizations of Des Moines.

Dr. King was in active practice until after the age of seventy, and was in full possession of her mental

faculties for many years after her body was too frail to permit her to follow her profession. A cerebral hemorrhage caused her death March 8 at the age of eighty-two years. One daughter survives, Miss Margaret King, a teacher in West Des Moines High School.

Edward J. Caldwell, M.D., aged forty-six; Keokuk Medical College Physicians and Surgeons, 1902; a practitioner for several years at West Chester, died at his home in Washington, to which place he had recently removed, March 21 from nephritis.

James Emmett Conn, M.D., aged fifty-one, State University of Iowa College of Medicine, 1892; Fellow of the American Medical Association; member of Iowa State Medical Society; member of Ida County Medical Society; a charter member of his county society; founder of the Conn hospital at Ida Grove; one of the leading surgeons of northwest Iowa, died suddenly at his home in Ida Grove, March 2 from angina pectoris. He was a brother of Dr. C. E. Conn of Sioux City and Dr. J. T. Conn, of Battle Creek.

James C. Davies, M.D., State University of Iowa; College of Medicine, 1880; member of Palo Alto County and Iowa State Medical Societies; a practicing physician at Emmetsburg for thirty-eight years, died suddenly at his home in Emmetsburg March 21 from uremia.

Elmer A. Doty, M.D., aged sixty-seven; State University of Iowa College of Medicine, 1885; Fellow of the American Medical Association, member of Iowa State and Johnson County Medical Societies; a practitioner at Oxford for thirty-eight years; died suddenly while making a professional call, March 7, from a cerebral hemorrhage.

Lewis J. Carpenter, M.D., aged eighty, Northwestern Medical College, St. Joseph, 1886; a life member of the Jasper County and Iowa State Medical Societies; one of the oldest pioneer physicians of Jasper county, died at his home in Pella, March 19 from uremia. Dr. Carpenter was the father of Dr. Oscar Carpenter, of Sully; Dr. Frank Carpenter, of Reasoner, and Dr. Fred Carpenter, of Pella, who with his wife survive him.

Emery Oliver Gonterman, M.D., aged thirty-eight; State University of Iowa College of Medicine, 1909; a practicing physician at Batavia; died at the Polyclinic hospital, Chicago, March 5, after an illness of two weeks.

Lawrence Bryant Hathaway, M.D., aged sixty-three; Rush Medical College, 1878; one of the pioneer physicians of Grundy county, having practiced at Reinbeck for thirty-eight years, died at his home in Reinbeck, March 18, following a long illness.

Orlando Voss Long, M.D., aged fifty-one; College of Physicians and Surgeons, Keokuk, 1898; member of Iowa State and Taylor County Medical Societies; a practitioner for many years at Gravity, died at St. Joseph's hospital, Omaha, following an operation, March 1.

James B. Tedrow, M.D., aged sixty-two; University of Michigan Medical School, 1886; located at Williams following his graduation, continuing in practice for thirty-two years in this locality; formerly a member of the American Medical Association, Iowa State and Hamilton County Medical Societies; died at his home in Williams, March 4 from paralysis.

Alonzo T. West, M.D., aged sixty-three, Bennett Medical College, 1874; a native of Iowa and a practitioner for forty years at Conway, Taylor county, died at his home March 12, after a long illness.

Arista J. Ward, M.D., State University of Iowa College of Medicine, 1887; died at his home in Manbeck, Linn county, March 20, from pneumonia.

CHANGES OF LOCATION

Dr. C. H. Hilger, of West Bend, has removed to Stratford, where he has purchased the practice of Dr. C. O. Fuller, who enters the M. R. C.

Dr. H. F. Keisling, of Dayton, has sold his practice to Dr. Gates M. Brown, of Ames.

Dr. E. A. Nash, of Frankville, who has taken some post graduate work has bought out the property and practice of Dr. F. W. Logan, of Fenton. Dr. Logan remains with Dr. Nash about a month when he will take a rest and some post graduate work and locate in western Iowa.

HOSPITAL NOTES

The first annual report of the Mary Greely Hospital, Ames, given out in December, is very gratifying. The statistical showing is: Number of cases cared for 328, of which 54 were obstetrical; 85 surgical; 7 pneumonia, and 20 were accident cases. Seventeen deaths occurred—thirteen adults and three infants.

The annual report of the St. Anthony Hospital at Carroll bespeaks for the excellent work carried on at that institution during 1917. The following figures appear in the report: Number of patients in the hospital January 1, 1917, 47; number of patients admitted during year 1917, 1174; surgical cases, 953; medical cases, 221; general anesthetics, 858; local anesthetics, 95; patients x-rayed, 226; skiagrams taken, 460; fluoroscopic examinations, 50; out patients treated, 60; births, 55; deaths, 27.

MEDICAL RESERVE CORPS

Just as the Journal was ready for the press, the following letter from the War Department,

Surgeon General's office, was handed in by Dr. Lewis Schooler, President of the Tri-State Medical Society of Iowa, Illinois and Missouri, with the request that it be published if possible.

April 8, 1918.

1. I wish through you to call to the attention of the members of your society the urgent need of additional medical officers. As the war progresses the need for additional officers becomes each day more and more apparent. Although the medical profession of the country has responded as has no other profession, future response must be greater and greater. The department has almost reached the limit of medical officers available for assignment.

2. I am, therefore, appealing to you to bring to the attention of the members of your society the necessity for additional volunteers. So far the United States has been involved only in the preparatory phase of this war. We are now about to enter upon the active, or the fighting phase, a phase which will make enormous demands upon the resources of the country. The conservation of these resources, especially that of man-power depends entirely upon an adequate medical service. The morning papers publish a statement that by the end of the year a million and a half of men will be in France. Fifteen thousand medical officers will be required for that army alone. There are today on active duty 15,174 officers of the Medical Reserve Corps.

3. Within the next two or three months the second draft will be made, to be followed by other drafts, each of which will require its proportionate number of medical officers. There are at this time on the available list of the Reserve Corps, an insufficient number of officers to meet the demand of this draft.

4. I cannot emphasize too strongly the supreme demand for medical officers. Will you give the department your assistance in obtaining these officers? It is not now a question of a few hundred medical men volunteering for service, but it is a question of the mobilization of the profession that in the large centers of population and at other convenient points as well as at all army camps and cantonments, boards of officers have been convened for the purpose of examining candidates for commission in the Medical Reserve Corps of the Army. An applicant for the Reserve should apply to the board nearest his home.

5. The requirements for commission in the Medical Reserve Corps are that the applicant be a male citizen of the United States, a graduate of reputable school of medicine, authorized to confer the degree of M.D., between the ages of twenty-two and fifty-five years of age, and professionally, morally and physically qualified for service.

6. With deep appreciation of any service you may be able to render the department, I am,

(Signed) F. C. GORGAS,
Surgeon General, U. S. Army.

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, MAY 15, 1918

No. 5

PROBLEMS OF STREAM POLLUTION IN IOWA*

LAFAYETTE HIGGINS, C.E., Des Moines
Sanitary Engineer, Iowa State Board of Health

To solve the problem of stream pollution in Iowa is to reconstruct the domestic life of the people.

More than fifty-three years ago, the Tenth General Assembly, 1864, enacted a statute making it a misdemeanor punishable by fine or imprisonment, or both, to throw dead animals into streams. The Thirty-third General Assembly, 1909, amended the statute by adding "night soil and garbage" to "dead animals."

This amendment was equivalent to prohibiting sewage disposal by stream dilution and is so interpreted.

Prior to the action of the Thirty-third General Assembly, over ninety cities and towns in Iowa installed sewer system which discharged unpurified sewage into streams, ravines, farm sloughs and barren water courses.

Iowa has few streams of considerable size, but upon such streams were the early cities built. As the state developed, inland cities and towns multiplied and were necessarily located in most instances remote from any sort of effective stream drainage.

Briefly stated, our steadily growing community and industrial life, with the constantly increasing accumulations of attendant community and industrial wastes, has resulted in disastrous overloading of drainage channels until there is scarcely a stream in the state whose waters even approximate their original purity.

Aside from the willful or careless pollution of our streams by dumping into them dead animals, garbage and other noisome substances, the chief sources of pollution are sewage and surface drainage.

In our earlier sewer building it was sought to provide for the discharge of both sewage and surface drainage by means of combined sewers,

in which case the surface run-off became a part of the sewage.

In recent years our sewers are built as sanitary sewers, and storm water drains are built to collect and discharge the surface drainage.

At the present time there are about 900 incorporated cities and towns in Iowa. Of this number, approximately 190 have sewer systems, either combined or sanitary.

The 710 municipalities which as yet have no sewer systems, are contributing to stream pollution by surface wastes carried away by the run-off storm water.

Perfect surface drainage seems essential and the town so situated that with every considerable down pour of rain its streets and premises are washed free of surface impurities, presents a fresh and cleanly appearance and may safely be rated as more sanitary and healthful than the town that reeks in stagnant pools, resulting from imperfect and sluggish surface drainage systems.

The difference is that the flat town keeps the waste products of its community life at home while the hilly town casts its surface wastes into the streams and drainage channels nearby to pollute the waters of the same, possibly, and in most cases probably, throwing upon adjacent territory and the people thereof, burdens additional to their own, by reason of polluted water supplies perpetuating the transmission of water borne diseases.

Far too little significance has been accorded to the dangers of the drainage of surface wastes. It only requires a sober second thought to realize that the most dangerous substances exist in surface wastes and that the surface of the ground is the natural immediate depository to receive community wastes.

One of the leading engineers of Iowa made the statement that the street wash of our cities needed a purification treatment just about as much as the sewage needs such treatment, before such street wash is discharged into streams or drainage channels. The statement contains much truth if indeed it is not wholly the truth. A

*Read at the First Annual Short Course for Health Officers, University of Iowa, September 22, 1917.

tremendous load will have been averted from the streams when effective garbage and refuse disposal systems are everywhere employed.

The following list of municipalities indicates the extent of direct sewage pollution of Iowa streams.

Municipality	Population 1915	County
Adel	1,425	Dallas
Akron	1,235	Plymouth
Algona	3,593	Kossuth
Anamosa	3,758	Jones
Armstrong	753	Emmet
Atlantic	5,039	Cass
Avoca	1,648	Pottawattamie
Battle Creek	688	Ida
Belle Plaine	3,668	Benton
Bettendorf	1,376	Scott
Boone†	12,253	Boone
Burlington	24,261	Des Moines
Cedar Falls	6,284	Black Hawk
Cedar Rapids	40,667	Linn
Charles City	6,374	Floyd
Cherokee	5,624	Cherokee
Clarinda	5,778	Page
Clinton	26,091	Clinton
Colfax	2,607	Jasper
Columbus Junction	1,107	Louisa
Corning	1,884	Adams
Council Bluffs	31,546	Pottawattamie
Davenport	48,942	Scott
Denison	3,455	Crawford
Des Moines	105,652	Polk
Dubuque	41,795	Dubuque
Dyersville	1,885	Dubuque
Eagle Grove	4,038	Wright
Elkader	1,213	Clayton
Emmetsburg§	2,647	Palo Alto
Essex	797	Page
Estherville	4,123	Emmet
Forest City	2,135	Winnebago
Fort Dodge	19,372	Webster
Fort Madison‡	9,796	Lee
Galva	478	Ida
Gladbrook	859	Tama
Glenwood	4,343	Mills
Hamburg	2,204	Fremont
Harlan	2,825	Shelby
Hawarden	2,045	Sioux
Humboldt	2061	Humboldt
Ida Grove	2,090	Ida
Independence	4,858	Buchanan
Iowa City	12,033	Johnson
Iowa Falls	3,716	Hardin
Keokuk	15,239	Lee
Lehigh	1,290	Webster
Le Mars	5,070	Plymouth
Little Rock	634	Lyon
Logan	1,641	Harrison
Lost Nation	577	Clinton
McGregor	1,244	Clayton

Municipality	Population 1915	County
Madrid	1449	Boone
Malvern	1,254	Mills
Manchester	3,102	Delaware
Manning	1,611	Carroll
Maquoketa	3,776	Jackson
Marble Rock	535	Floyd
Marengo¶	2037	Iowa
Marshalltown	16,879	Marshall
Mediapolis	867	Des Moines
Montezuma	1,326	Poweshiek
Monticello	2,159	Jones
Muscatine	15,785	Muscatine
Nashua	1,282	Chickasaw
New Sharon	1,225	Mahaska
Nora Springs	1,148	Floyd
Oakland¶	1196	Pottawattamie
Olin	706	Jones
Ottumwa	22,437	Wapello
Parkersburg	1027	Butler
Paullina	875	O'Brien
Pella	3,096	Marion
Peterson¶	534	Clay
Rock Rapids	2,031	Lyon
Sac City	2,521	Sac
Shell Rock	829	Butler
Shenandoah	5,637	Page
*Sioux City	61,774	Woodbury
Sioux Rapids	1,023	Buena Vista
Spencer	4,176	Clay
Villisca	2,132	Montgomery
Vinton	4,053	Benton
Wapello	1,532	Louisa
Washington*	4,544	Washington
Waverly	3,561	Bremer
Webster City	5,834	Hamilton
Wellman*	839	Washington

*Septic tanks installed but so far outgrown that their effectiveness must be considered negligible.

†Sewage treatment designed but city council has deferred installation.

§Sewage treatment contemplated but plans are not perfected.

‡Sewage treatment plant abandoned. Sewage by-passed into river.

¶Sewage treatment plant planned.

The total population, 680,831, of the eighty-one foregoing municipalities which are discharging untreated sewage into the streams of Iowa, and the interstate streams upon the borders of the state represents 28.86 per cent. of 2,358,066, the total population of the state.

The population of municipalities discharging sewage directly into the border streams, or interstate streams, totals 231,733, with the exception of Council Bluffs and Keokuk with a combined population of 46,785. All of the municipalities discharging untreated sewage into the border streams are contributing to the pollution of the

water supply of other Iowa cities. Deducting the population of Council Bluffs and Keokuk from the total population of the municipalities discharging untreated sewage into streams, we will have remaining the population of 534,046, or 26.83 per cent. of the total population of the state.

The full significance of the stream pollution caused by the discharge of untreated sewage, as above indicated, cannot be determined at all accurately from present data, and it is doubtful whether a complete study of the problem would give a definite conclusion, but the fact that 26.83 per cent. of the State of Iowa are responsible for sewage pollution of the streams of the state must be considered significant.

In contrast to the stream pollution described is the fact that each year some of the municipalities which have been discharging untreated sewage into streams, have installed sewage treatment plants. Within the past year, Grinnell and Oskaloosa have completed new sewage treatment plants and Creston is at present engaged in a like installation.

It will also be noted that all municipalities situated inland, within the state, which have installed sanitary sewer systems within the last four years, have either installed sewage treatment plants in connection with the sanitary sewer systems or have planned to install such sewage treatment plants in the near future. During this period of time, the State Board of Health has required the submission of plans and specifications for sewer systems and sewage treatment plants, and only complete plans and specifications for such sewer systems, including sewage treatment plants, have been approved. Prior to this period, approximately forty municipalities installed some type of sewage treatment plant in connection with the sanitary sewer systems installed.

The following list of municipalities in Iowa which have installed sanitary sewers with sewage treatment plants, including those under construction, may be considered approximately correct to date.

Municipality	Population 1915	County
Ackley	1,289	Hardin
Afton	1,007	Union
Albia	5,138	Monroe
Alden	806	Hardin
Alton	988	Sioux
Ames	5,091	Story
Anthon	758	Woodbury
Ashton	597	Osceola
Audubon	2,084	Audubon
Bedford	1,950	Taylor
Belmond	1,419	Wright

Municipality	Population 1915	County
Bloomfield	2,282	Davis
Brooklyn	1,485	Poweshiek
Calmar	952	Winneschiek
Carroll	4,031	Carroll
Centerville	7,803	Appanoose
Chariton	5,235	Lucas
Clarion	2,553	Wright
Clear Lake	2,741	Cerro Gordo
Corydon	1,757	Wayne
Cresco	3,199	Howard
Creston	7,572	Union
Decorah	4,021	Winneschiek
Dewitt	1,877	Clinton
Dows	1,001	Wright
Dunlap	1,393	Harrison
Early	534	Sac
Fairfield	6,113	Jefferson
Fayette	1,175	Fayette
Fredericksburg	635	Chickasaw
Greene	1,315	Greene
Grinnell	5,661	Poweshiek
Grundy Center	1,629	Grundy
Hampton	3,025	Franklin
Hartley	1,115	O'Brien
Holstein	1,137	Ida
Indianola	3,495	Warren
Jefferson	3,103	Greene
Jewell	1,074	Hamilton
Kenwood Park	559	Linn
Keota	1,071	Keokuk
Kingsley	1,052	Plymouth
Knoxville	3,731	Marion
Lake Mills	1,480	Winnebago
Lake View	814	Sac
Lamoni	1,778	Decatur
La Porte City	1,541	Black Hawk
Leon	2,199	Decatur
Lisbon	879	Linn
Mapleton	1,200	Monona
Marion	4,675	Linn
Mason City	17,152	Cerro Gordo
Merrill	536	Plymouth
Missouri Valley	3,764	Harrison
Mt. Ayr	1,708	Ringgold
Mt. Pleasant	4,089	Henry
Mt. Vernon	1,568	Linn
Nevada	2,686	Story
New Hampton	2,664	Chickasaw
Newton	5,165	Jasper
Northwood	1,525	Worth
Odebolt	1,236	Sac
Oelwein	7,137	Fayette
Ogden	1,403	Boone
Onawa	2,210	Monona
Orange City	1,417	Sioux
Osceola	2,714	Clarke
Oskaloosa	10,485	Mahaska
Postville	1,003	Allamakee
Pringhar	923	O'Brien
Reinbeck	1,257	Grundy
Remsen	1,098	Plymouth

Municipality	Population 1915	County
Riceville	945	Mitchell
Rockwell City	1,864	Calhoun
Rolfe	1,115	Pocahontas
Sanborn	1,456	O'Brien
Schaller	680	Sac
Seymour	2,146	Wayne
Sheffield	1,035	Franklin
Sheldon	3,323	O'Brien
Sibley	1,755	Osceola
Sigourney	2,109	Keokuk
Spirit Lake	1,602	Dickinson
State Center	1,037	Marshall
Storm Lake	3,158	Buena Vista
Stratford	601	Hamilton
Strawberry Point	1,157	Clayton
Stuart	1,849	Guthrie
Sumner	1,585	Bremer
Sutherland	812	O'Brien
Tipton	2,176	Cedar
Toledo	1,721	Tama
Traer	1,378	Tama
Tripoli	854	Bremer
Valley Junction	3,026	Polk
Walcott	461	Scott
Waukon	2,168	Allamakee
West Liberty	1,760	Muscatine
West Burlington	1,091	Des Moines
West Union	1,773	Fayette
Wilton	1,176	Muscatine

The 101 municipalities having installed sewage treatment plants, as indicated by the foregoing list, represent a total population of 235,948, or 10 per cent. of the population of the state.

The following municipalities have prepared plans and specifications for sanitary sewer systems with sewage treatment plants, the installations to be made as soon as the same can be financed. Present industrial and financial conditions have prevented the installation of nearly all of these proposed installations during 1917.

Municipality	Population 1915	County
Charter Oak	799	Crawford
Dayton	806	Webster
Denver	478	Bremer
Elliott	558	Montgomery
Farley	729	Dubuque
Garner	1,226	Hancock
Germania	426	Kossuth
Graettinger	743	Palo Alto
Grand Mound	481	Clinton
Lenox	1,320	Taylor
Meservey	257	Cerro Gordo
Milford	823	Dickinson
Oxford Junction	852	Jones
Panora	1,107	Guthrie
West Branch	712	Cedar
Williamsburg	1,157	Iowa
Winterset	2,860	Madison
Woodbine	1,613	Harrison

The foregoing list represents a population of 16,947, or seven-tenths of 1 per cent. of the total population of the state.

Total population of state, 1915 census.....	2,358,066
1. Population responsible for direct sewage pollution of streams.....	680,831
2. Population provided with means of sewage purification	235,948
3. Population planning sewage purification	16,947
4. Per cent. of total population responsible for direct sewage pollution of streams..	26.83%
5. Per cent. of population provided with means of sewage purification.....	10%
6. Per cent. of population planning sewage purification	70%

If the population be divided into rural and urban, and the foregoing data applied to urban population only, the following summary may be considered:

Rural population.....	1,080,116
Urban population.....	1,277,950
Total.....	2,358,066
1. Urban population responsible for direct sewage pollution of streams.....	680,831
2. Urban population provided with means of sewage purification.....	235,948
3. Urban population planning sewage purification	16,947
4. Per cent. of urban population responsible for direct sewage pollution of streams	53.28%
5. Per cent. of urban population provided with means of sewage purification.....	18.46%
6. Per cent. of urban population planning sewage purification.....	1.33%
Number of municipalities (approximate)..	900
Number of municipalities with sewer systems	190
Number of municipalities without sewer systems	710
Unincorporated centers of population, or villages, in need of sewers, approximately	700

The foregoing data and history of the development of sewer building indicate that we are yet far from the solution of the problem of stream pollution.

The statute, Sec. 4979, Supplement to the Code, 1913, which makes it a misdemeanor to throw dead animals, garbage, and night-soil into streams is the only statute we have dealing directly with stream pollution. This statute is not specific as to sewage pollution, but it may consistently be held that a statute which forbids the dumping of garbage and night-soil into streams

could be interpreted to forbid the discharge of unpurified sewage into streams.

However, the courts are granting relief to offended parties through, or upon, whose premises unpurified sewage is discharged. This relief may be obtained either in the form of damages sustained or by means of injunction forbidding such discharge of unpurified sewage.

Within the last few years a number of municipalities in Iowa have been compelled by offended parties to take the necessary steps to install sewage treatment plants. The most notable instance of such action is in the case of the City of Creston which is now installing a sewage treatment plant as the result of a mandatory injunction requiring the city to purify its sewage.

The city of Grinnell, after repeated trials in court, has installed a complete sanitary sewer system with modern sewage treatment plant, but was not able to complete these installations until injunction proceedings instituted by the owners of adjacent farms had been defeated in the courts, the final decision being reached in the Supreme Court of the state. In this particular instance the pleading of the city was to the effect that the sewage would be properly purified which duty the city undertook in good faith to perform. However, the decision of the Supreme Court is to the effect that the city must properly purify its sewage, and if the city fails to do so, the offended parties may find relief either by damages or by injunction.

Acting under the provisions of Section 2565 of the code, which defines the powers and duties of the State Board of Health, and with the advice of the attorney general, the State Board of Health has required that all plans and specifications for sewer systems shall be filed with the state board for approval. The State Board of Health is further advised by the attorney general that it has no right to approve plans and specifications for sewer systems in Iowa which do not include plans and specifications for adequate sewage treatment plants. So far as future installations are concerned, the solution of the problem of sewage pollution of streams may be properly solved, but the problem of supplying the necessary sewage treatment plants to sewer systems already installed, seems difficult without additional legislation, except by the method previously noted, that of the offended property owners appealing to the courts for relief against the discharge of untreated sewage upon, or through, their premises.

If the only solution of this part of the problem lies in the appeal to the courts, then the more

rapidly such appeals are made the sooner will the problem be solved.

Considerable difficulty arises in the fact that our leading sanitary engineers recognize the disposal of sewage by stream dilution as a desirable economic solution of the problem, and a few of such engineers advocate such method of disposal wherever it is possible to discharge sewage into streams.

The engineer recently employed by the city of Davenport to recommend a future policy of sewage disposal for the city, recommended the continuance of the discharge of raw sewage into the Mississippi river with the possible provision of settling out the solids if future conditions should prevent the free discharge of the raw sewage into the river.

The Mississippi river is a border stream, or inter-state stream, but it is seriously polluted by several of our larger border cities, and nearly all of these cities are attempting to obtain a satisfactory public water supply from the Mississippi river.

Our greatest difficulty lies in the fact that all of our larger cities are disposing, or are attempting to dispose, of their sewage by stream dilution. The officers of smaller municipalities, whether situated upon the larger streams or situated inland, do not understand why their own municipalities are required to provide complete sewage treatment plants while the largest cities of the state are allowed to continue to pollute the streams of the state by discharging into them unpurified sewage.

In the final analysis of the problem, the cost of sewage treatment often defeats the engineer.

Erroneous ideas have prevailed for so long that it seems necessary to educate the people to the necessity of the safe disposal of community wastes. People have conceded that an adequate and safe public water supply is essential in any city or town. They likewise admit the necessity for pure food and pure air, but they have not reached the point where they can understand, or will admit, that it is just as essential that the waste products of the human body shall be safely disposed of as it is that the body shall be supplied with pure food, pure water and pure air. When this fact is understood and appreciated, there will be little difficulty in financing sanitary sewer systems, and refuse disposal plants.

It may easily be shown that the cost of the disposal of all kinds of community refuse, no matter how expensive the method, is about the least for the returns received of any investment that can be made.

Our statutes provide methods of financing sewer systems, sewage treatment plants, garbage disposal plants and refuse collection, but these methods apply only to municipalities.

This procedure leaves the unincorporated communities, or villages, without a means of financing the necessary installations for the disposal of their community wastes except the same may be accomplished by the individuals of such communities cooperating and contributing to the common purpose.

It is also true that the methods of taxation are such that people lose sight of individual responsibility.

If it were possible under our statutes to levy per capita taxes for defraying the cost of the safe disposal of community wastes, such installations could be easily financed and the individual responsibility of the citizens would enter into the solution of the problem.

It may be worth while to consider what might easily be done in any municipality by means of funds which would represent the equivalent of a per capita tax.

We may assume a population of 1,000 which is not far from the population of the towns of Iowa now most actively engaged in sewer building. Suppose a tax or outlay of two cents per capita per day be collected for the sanitation of the town. Two cents per capita per day represents \$7.30 per year or \$7,300 per year for the entire population of the town. Suppose such an outlay were provided annually. In ten years' time, there would be expended \$73,000. This would be sufficient to install a sewer system with sewage treatment plant and provide for the safe disposal of community refuse. In other words, an outlay of two cents per capita per day would provide perfect sanitation for the town of 1,000 population.

A lesser amount per capita would be needed as the population increased. If the largest city in the state be considered, the city of Des Moines with 105,000 population, an expenditure of one cent per capita per day would mean the expenditure of \$1,050 per day or \$383,200 per year. What could not the city of Des Moines do in the way of sanitation with the proper expenditure of that amount of money annually, and yet the amount of one cent per capita per day in the city of Des Moines would only represent a small part of the financial waste practiced by the residents of the city.

Continual education of the people along sanitary lines and more helpful legislation are needed to improve the polluted condition of our streams.

A state wide inspection throughout the year by sanitary engineers in the employ of the state would be highly effective in preventing needless stream pollution.

It is possible that economic considerations may enter into the solution of the problem of stream pollution in the future.

Intensive farming will improve rural conditions. The exhaustive leaching of the soil by rapid methods of drainage will be stopped. Terrace farming, or its equivalent, will stop needless erosion of the surface soil and every effort will be made to conserve the fertility of the soil.

Sometime all community wastes will be conserved and converted into useful assets instead of wasteful losses.

When the necessities of our people require the economic conservation of all our natural resources, we may expect that waste products of every character will be utilized and all possible recovery made.

When our economic blunders are corrected, stream pollution will be minimized and may ultimately be fully solved.

PATHOLOGY OF PREGNANCY*

PAUL REED, M.D., Iowa City

It is not our purpose to attempt to even name, much less give in detail any or all the pathological conditions that may occur in pregnancy, but simply to review briefly some of the more important ones as we have observed them in our clinical work, in the past four or five years, giving some of their diagnostic and clinical findings.

The conditions and changes that take place in the human body during normal pregnancy, are so similar and closely allied to those in pathological conditions that it is often difficult to distinguish between the normal and abnormal as evidenced by their symptoms.

Among the complications of pregnancy that we meet with frequently is tuberculosis, averaging about three a year for the past five years.

In incipient cases we have been emptying the uterus, on the advice and recommendation of the tuberculosis specialist, early in pregnancy and with good results as far as we have been able to follow them through the records of the sanitarium. Of three cases of this disease, late in pregnancy, two died within a year, one of these being apparently an incipient case in which chances of recovery seemed good. The third is

*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, May 9, 10, 11, 1917, Des Moines.

still living but, according to reports we have received, is in the last stages of the disease.

We attempt to draw no conclusions from our brief experience but simply to call attention to the need of early diagnosis of tuberculosis in pregnancy, in order that proper treatment may be carried out.

Between 4 and 5 per cent. of our cases are syphilitic. In the diagnosis of this condition, in pregnancy, we have discovered that we can not place too much reliance on the Wassermann reaction, as post delivery examination of both placenta and child has on several occasions shown positive indication of syphilis, when the Wassermann report has been negative. Again, on two occasions when double plus Wassermann has been reported, no syphilitic lesions of the placenta has been apparent and the Wassermann report on the child has been negative, leaving us in doubt.

Syphilitic treatment, in as far as we have been able to observe, has no dilatorious effect on pregnancy. Abortion rarely occurs but there seems to be a tendency to premature labor, with an occasional still birth, the latter, we think, due to the syphilitic changes in the placenta.

Of our cases, complicated by nephritis, we have found it necessary to end the pregnancy, by inducing abortion in two cases. In one case a diagnosis of chronic interstitial nephritis had been made a year previously. Both cases showed marked urinary findings and symptoms of uremia. Two other cases under treatment, because of this condition, had premature labors, one at about the thirty-first and the other the thirty-fifth week of pregnancy, both mothers recovered and both babes are living.

In attempting to make a differential diagnosis between chronic nephritis and other forms of toxemia of pregnancy, we have found some difficulty.

Previous history is very important, however, the method of placing the patient on Rosenthal diet and testing the specific gravity of the urine voided at two hour intervals for twenty-four hours, and finding it practically constant will help in making the diagnosis of chronic interstitial nephritis.

Our cases of pyelitis have, as a rule, responded to the ordinary medical treatment, rest in bed and prescribed diet. Some have persisted, however, until after delivery, and one case with temperature of 103 degrees and pulse of 110, aborted at about the fifth month.

Our cases of psychosis have been quite interesting and variously treated. Two have been re-

ferred to the insane hospital without interruption of their pregnancy, on the advice of the neurologists consulted. In one case we interrupted the pregnancy, the mental condition being much improved at the end of three weeks, with later complete recovery. A fourth case, at term, was treated by manual dilatation and extraction because of her extreme violence and the danger to both herself and child at time of labor.

Of our cases of chorea, only one has given us any trouble, the other having gone through pregnancy with the ordinary iron, arsenic and diuretic treatment. In this case the condition was such that physical exhaustion was imminent, so in order to avoid the further strain of labor on her system, we delivered her by abdominal Cæsarean section. The patient herself made a nice recovery but the babe died in about thirty-six hours.

While perhaps the majority of cases of pregnancy pursue a normal course, yet without doubt, there are frequent pathological lesions causing more or less disturbance in metabolism and faulty elimination. These disturbances may be very slight or again very marked, but from their character they have been grouped under the heading of toxemias of pregnancy.

I will not attempt to discuss the various theories of the etiology or source of the toxins responsible for this condition, but certain inflammatory and degenerative changes take place in the liver, kidney and certain other organs of the body, resulting in faulty metabolism and elimination of waste products together with nervous and other symptoms.

One of the most marked forms of toxemia is that known as hyperemesis gravidarum.

While about one-half of the pregnant women are disturbed with more or less nausea and vomiting during the early months of pregnancy, whether all are due to a toxic condition is impossible to say for at least a part can be explained as due to other causes such as retroverted uterus or neurotic condition of the patient, yet even in these the toxic element can not be overlooked.

Unfortunately in our clinic we have had very few cases of marked nausea and vomiting, the majority of them being what you might term border line cases which improved under ordinary treatment.

Of two cases which did not respond to treatment, we found other lesions which accounted for the same, as illustrated by the following history:

Mrs. R., age thirty, housewife. Entered the hospital because of complete anorexia and marked loss

in weight. Patient was about three months pregnant and had been vomiting for about five weeks and now could not even retain water on the stomach. Had lost between twenty-five and thirty pounds in weight. Pulse 110; temperature 99.2. Urine examination showed albumin, numerous casts and few blood cells. Previous history showed her to have had chronic interstitial nephritis, so after observing the case for a few days and verifying the previous diagnosis, the uterus was emptied, the patient recovering her health only in part.

The history of the other case is similar, except previous history of nephritis was absent. Same condition existed as shown by urine and subsequent history.

The examination of urine in this class of cases shows it to be scanty in amount, which can be explained by the lack of fluid intake, as a rule, a trace of albumin and an occasional cast.

The nitrogen output is markedly diminished. There is, however, such a marked variation in this in normal cases that it is of little significance. We have been able to demonstrate that the percentage of ammonia nitrogen as compared to that of urea nitrogen is markedly increased, while the amount of acidosis is important only as we are able to demonstrate it to be due to the acetones and diacetic acid. As to treatment we have little to add. Early and careful diagnosis and attempting to correct any underlying pathological condition. Reduction of the proteid intake to a minimum, as the condition seems to be the result of faulty proteid metabolism. Rest in bed, and stimulate elimination by both bowels and kidneys, and lastly emptying the uterus if the case grows worse, before exhaustion, a procedure that we have not had to resort to, except when complicated with nephritis.

Hurst of Philadelphia has been experimenting with corpus luteum extract with reports of some success. This line of treatment we have not tried as yet.

The other great toxemia is eclampsia, and we have come to believe that culminative convulsive seizures are preventable in the vast majority of these cases. In the past ten years of our clinical work we have had only one case that has had convulsions who had been in the hospital prior to the time of seizure, while at the same time we have had about twenty-five cases that have shown symptoms of threatened eclampsia, such as high blood-pressure and albumin.

We have also had about an equal number in which convulsions and coma have occurred prior to their entrance. The pathology of this condition is well known so will not attempt to review it.

According to whether the liver and kidneys are chiefly involved, we have been able to classify two types. The liver type, in which, because of faulty metabolism, we have marked gastric disturbances, some jaundice, tendency to hemorrhage, little edema and a small amount of albumin in the urine, while in the kidney type we are apt to have headache, edema, marked nervous symptoms, high blood-pressure and marked albuminuria. Frequently, however, both organs are involved to more or less extent, consequently a mixture of symptoms.

While occasionally a case occurs in which there has been few if any premonitory symptoms, yet in the vast majority of cases symptoms pointing toward toxemia are apparent to the careful observer. Edema, while very common in the later of months of pregnancy, should always be looked upon with suspicion.

The urine may vary greatly in normal cases, both as to quantity and constituency; however, in eclampsia the presence of albumin in any considerable amount with hyalin, granular and epithelial casts and perhaps some blood cells, point toward eclampsia of kidney involvement, while in those cases in which the liver is involved, the testing of the urine for urobilin and urobilinogen is of great importance as showing the degree of impairment of the liver, testing also for the nitrogen output and the relative percentage of each is also of value. Yet even in apparently normal pregnancies there seems to be a storing up of nitrogen in the body so it is necessary to have the patient on a diet of known nitrogen value in order to come to any satisfactory conclusion.

Increased blood-pressure is a very important symptom. Normally the blood-pressure is very little, if any higher than that of an ordinary woman of her age. Every case in which the blood-pressure reaches 140 should be watched with suspicion, and if above 150 put to bed and on treatment. Headache, nervous symptoms, nausea and eye disturbances should always be watched for and investigated.

How frequently eclampsia occurs depends on whether one considers as eclampsia, those cases which have pre-eclampsia symptoms, and do not terminate in convulsions, as coming under that category. DeLee estimates the convulsive seizures as occurring once in about 500 cases. Cragen gives the Salone Maternity Hospital statistics as occurring there about one in seventy-five cases, which is probably high owing to the large percentage of such cases being sent to the hospital for treatment.

Our own experience shows about one to 100

cases, and if we consider those cases which have pre-eclampsia symptoms, that do not terminate in convulsions, about one in fifty.

The prognosis for ante-partum cases seems to be worse than others, the mortality being about 33 per cent.

Taking up the treatment of threatened eclampsia, the importance of close observation of all pregnant women and prompt treatment of any abnormal condition that arises, is obvious. The careful regulation of the diet, eliminating therefrom the proteid food, in a large measure, as it seems to be this, that the liver is unable to care for, trying to aid elimination, stimulating the activity of the skin by hot packs, bowels by cathartics and kidneys by free intake of fluids.

Reduction of the blood-pressure by the above methods and perhaps the use of nitroglycerin and veratrum-verdi, and if improvement of the symptoms does not occur or condition of our patient grows worse, emptying the uterus.

If convulsions occur, the uterus should be emptied as rapidly as possible compatible with the welfare of the mother and child. In attempting to control convulsions, the use of anesthetics, which have deleterious effect on the liver or kidney, must be avoided. It is best to control them with chloral or even morphine, and if a general anesthetic is needed, nitrous oxide and oxygen is probably the best.

Bleeding has been resorted to in a number of our cases, either allowing the patient to bleed freely at the time of delivery or opening a vein, using normal salt with sodium bicarbonate to replace the lost fluid, either intravenously or by hypodermoclysis, and at the same time neutralize the acidity of the blood and stimulate elimination.

Time will not permit discussion of ectopic gestation, abortion, placenta prævia and many other conditions that may occur in pregnancy.

What can we, as physicians, do to render pregnancy a safer and less dreaded ordeal to the average woman?

1. By making a thorough physical examination of every woman, early in pregnancy, to determine the condition of her general health. We might go a step further and say this should be done before pregnancy has occurred or even marriage. I hear some one say this is impossible, but with the better education of our people along health lines, it is fast becoming possible, and the physician should do his part to bring it about.

2. By making a careful pelvic examination and accurate pelvic measurements, taken especially if a primapara, in order to be forewarned

of any obstruction or difficulty that may be expected at time of labor.

3. By taking a careful family history as well as the patient's history, but more especially that of previous pelvic disease and pregnancies.

4. By making frequent examination of the urine on an average of once every two weeks, which should include microscopic as well as test for specific gravity, albumin and sugar. And in obscure cases, tests for the functional activity of the liver and kidneys should be made.

5. By taking blood-pressure at frequent intervals as a routine.

6. The patient should be instructed to report any abnormal occurrences immediately to her physician, and to report at frequent intervals to the office for encouragement and advice.

7. The physician should see and examine his patient in the last few weeks of pregnancy and thereby eliminate the necessity of a vaginal examination at the time of labor, which we consider one of the most fruitful sources of puerperal infection.

INDICATIONS AND USE OF DRUGS IN OBSTETRICS*

H. W. VINSON, M.D., Ottumwa

By obstetrics, the writer has in mind the definition which means the science of child-bearing and must necessarily include all of that period of time from conception to the end of the puerperium. It is not my intention to exhaust the subject, as that would take several works on medicine, but to speak of only some of the diseases incident to pregnancy and the puerperium. I will discuss them and give indications for medical treatment, and the drugs most suited for the relief and treatment of these diseased conditions. I will also include the drugs used in labor, both normal and abnormal. The use of drugs in obstetrics has been somewhat empirical. Going back to the musty shelves of the past, we should delve into its mysteries and find wonderful tales and miraculous cures, aided and abetted by some wonderful drugs. Child-bearing has gone on since the beginning of time, and the accumulation of so much experience by the practice of such a common art, has brought its superstitions just as all branches of medicine have brought theirs. We do not wish to deal with anything but scientific up to date medicine in obstetrics, and will try and let the dead past bury its dead.

*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1917.

At the beginning of conception, we find the first thing that usually or at least often needs our attention, is the nausea of pregnancy. It occurs in over 50 per cent. of pregnant women and runs a course which may be very mild, resulting in an occasional vomiting, through the severe grades, even to the hyperemesis gravidarum with all its depressing scenes.

The cause is yet to be definitely found and at best can be said to be due to infection, toxemia or reflex trouble. In the severe forms we find a degeneration of the liver cells, similar to that following the ingestion of some protoplasmic poison such as chloroform, and accompanied by parenchymatous degeneration of kidney cells, similar to the kidney of pregnancy.

The reflex causes may be found in the pelvis, gall-bladder, stomach or in any organ of the body, and once relieved, the symptoms are abated. The stretching of the fibers of the cervix is an added cause.

For the medical relief of the nausea of pregnancy, we go back to empirical treatment. The number of drugs recommended for the complaint almost equals that for whooping cough. We should regard all beginning vomiting of pregnancy, as serious, until it has proved otherwise. Our treatment should consist first of elimination, and this is accomplished by saline, such as effervescent phosphate of soda given before each meal. Sometimes a mild cascara pill serves the purpose to keep the bowels open, if we wish a laxative only. The diet should be simplified and food taken that is easily assimilated. This is to be combined with the administration of some gastric sedative such as cerium oxalate two grains with five grains of scale pepsin after each meal. Ingluvin may be substituted for the pepsin if desired. Milk of magnesia may be given before meals in dram doses, with some of the bismuth salts, usually the subnitrate. Further gastric sedatives are menthol, small amounts of cocaine, volatile oil of peppermint or wintergreen.

Sometimes the drinking of a cup of strong coffee immediately after rising, tends to give some relief. If gastritis or atonic dyspepsia develops, strychnia in small doses, or better tinct nux vomica ten drops in water before meals, may help to quiet this disorder. Champagne or brandy or cracked ice may also be tried.

Counter irritation to the epigastrium or to the spine or the application of the Longe ice bag, may be tried in order to overcome reflex conditions. Adrenalin ten drops of 1/1000 solution three times daily per month or three drops hypodermatically, quiets down about 50 per cent. of

cases. All these may fail when the final therapeutics abortion may have to be advised if the condition develops into the extreme stage of this condition.

Habitual abortion or habit abortion often taxes our patience and ingenuity. On account of some nutritive disorder, nature seeks to expel the uterine contents any time from the first to the fifth month. Of course syphilis is the greatest cause of this, but a great many cases are not syphilitic, or if so, syphilis is not present in the prospective mother so as to be recognized by our modern methods, such as Wassermann reaction, etc. One of the patient's parents may have had syphilis and handed down some luetic taint, which might cause nature to expel the ovum. But in the so-called non-syphilitic cases, we might suspect some failure in the function of the ductless glands, and we may have a series of abortions or misconceptions. A case illustrating this. Woman aged thirty-six with history of atrophic rhinitis since childhood, had misconception at six weeks, followed in two years by another misconception of eight weeks duration. This was followed in one and one-half years with a healthy baby, to be followed in two years with misconception of four weeks duration. This was followed by pregnancy one year later. A very remarkable regeneration of the mucous membrane of the nose has since occurred, and was pronounced by a prominent nose and throat specialist, to certainly indicate some ductless gland influence.

This type of cases is benefited by small doses of potassium iodide, say five grains well diluted in water after meals. Some stimulation of the thyroid must occur, thus stimulating other ductless glands. This has been tried in several cases and we were able to carry our cases through to full term.

If our cases are anemic, we must give iron in some of its numerous forms, always remembering to look after the excretions and to avoid constipation. When due to syphilis, then it resolves itself into the proper treatment for that disease. Much has been said about syphilis in pregnancy. Authors differ as to the method of diagnosis, but all agree that the Wassermann reaction must be very, very positive and made by an expert on whom we can rely. Sometimes a healthy woman gives the reaction, and it sometimes exists in a toxemia.

Again, pregnant mothers having tuberculosis, malignant growths or eclampsia, may give positive Wassermann when syphilis is absent. Our treatment is the same as in non-pregnant states.

Salvarsan is useful for the child and mother in

the florid state, but will not always prevent the death of the foetus from toxemia. The majority of the profession use salvarsan for the acute and severe cases and mercury and iodides to complete the cure. The excretion of arsenic should be carefully watched by frequent examinations of the urine. Failure of excretion of arsenic may result in poisoning. The hypodermatic use of mercurials is used very extensively in this condition, especially bichloride and mercury salicylate.

Constipation is the rule in pregnancy, not the exception, and a habit is often begun which lasts during a life time. The retirement during the latter months incident to pregnancy, the lack of exercise commonly taken, the pressure from the enlarged uterus on bowels, and peculiarity of diet, are often given as a cause. A certain amount of exercise is imperative in this disorder and it should be daily and in the open air if possible. Plenty of good water and a liberal diet of fruit are useful additions to our treatment. Certain articles of diet, such as bran or rye bread, seem of themselves to be curative agents. A medicinal laxative must sometimes be used, and in my experience, fl. ext. cascara in from 15 to 60 drop doses, given on loaf sugar once daily, has given good results. If the presence of hemorrhoids does not allow a laxative, an enema of soap and water or some warm olive oil introduced into the rectum at night, gives a nice easy bowel movement.

I have had very little success with the agar preparations now on the market. I have in one instance succeeded in setting up a marked colitis by their use. Phenolphthalein may be used in from two to four grs. daily, reducing this dosage if too great. My experience is that not 50 per cent. of people get results from this drug. Compound licorice powder is used with good results by many practitioners. It gives a soft even evacuation, can be given over a long period of time safely, and seems to have other beneficial effects than the relief of constipation. The sulphur content of the drug keeps down intestinal fermentation, thus decreasing toxemia.

Our treatment for albuminuria of pregnancy with its possible danger of eclampsia, should be very thorough and combined with watchful expectancy. The clinical picture can change so quickly that we should take nothing for granted and always be prepared for the worst.

Our patient should take a great deal of rest and in bed at least a part of the time, with an exclusive milk diet for a while. Buttermilk may be substituted, and a cereal and some green vegetables may be added if the case permits.

The clothing should be silk or wool to avoid sudden chilling of the skin, and two or more watery evacuations from the bowels should daily be obtained with some alkaline salines. Plenty of water should be given at all times, and frequent tests of twenty-four hour specimens of the urine should be made. The blood-pressure should also be taken frequently.

The administration of thyroid extract, grains three to five, three times daily, seems to have not only a good effect in these cases, but sometimes results in a cure. Here we again wander in the empirical darkness, as we do not know just why we give this drug, but the stimulation of the thyroid with the increased thyroid secretion put into the circulation, must certainly increase metabolism, and make ready for elimination substances not already fit, and which would be harmful to the excretory organs. Our aim is to tide these patients over to fetal viability, and our resources are further taxed when the symptoms increase, showing us impending eclampsia. The twitching that precedes the eclampsia seizure, the pain in the epigastric region, headache, disordered vision, increased albuminuria and blood-pressure, do not always mean the immediate emptying of the uterus.

Bromides and chloral per rectum in suitable large doses, with hot moist packs, often improve the situation for a time. The use of hot packs has been disputed by some prominent authorities on the ground that the toxemia are colloids, and have already entered into combination with the nerve cell, and that sweating does not serve to eliminate them through the glands of the skin. They are useful after delivery, if not before.

If our case gets worse and a convulsion occurs, it is a good rule to not wait until another one, but deliver at once if surroundings are at all favorable. A dose of Norwoods tincture of veratrum viride, given in 5 or 10 drops every hour until the pulse falls below 80. The physiological action of veratrum viride is to reduce blood-pressure by its action on the heart through the vagus. It is used empirically, but we all feel better to have a dose or two in the circulation of our patient. If our patient is in stupor, no anesthetic should be used for the delivery. Normal saline under the breasts and bromide and chloral with hot moist packs should be the rule after delivery. Under no circumstances should pituitrin be used in this condition, as it usually increases blood-pressure, and we have an excess as it is.

Ether should be the anesthetic used as a routine, although nitrous oxide and oxygen can be substituted if an anesthetic is needed. The cyan-

osis accompanying these cases often make the administration of any anesthetic an important measure. The use of saline cathartics should be ordered as these have a double effect, viz.; eliminate by bowel and to help alkalinize the blood and prevent acidosis.

During labor, normal or otherwise, we often find some indication for the use of drugs. Inefficient pains during the stage of dilatation may wear the strength of our patient and fail to hasten the labor to the second stage. Sometimes ten grains of quinine will help, providing the presentation and position are good.

Often, after giving twenty grs. chloral and letting our patient sleep for several hours, the pains will be renewed with great vigor, or one-eighth to one-fourth gr. morphine may be given with like effect, the morphine helps relax the cervix. This latter is a good remedy in spasmodic *os uteri*, especially where a dry birth has caused the cervix to be irritated by the hard occiput instead of the gently dilating bag of waters. It may be given as before, one-eighth to one-sixth gr., to produce relaxation and rest. In both these conditions, abnormal positions must be remedied.

When we come to the second stage of labor, we are confronted often with two conditions; inertia of the uterus, and the ordinary painful contractions, natural to the second stage. In the treatment of the inertia of the uterus, we have in times past resorted to quinine sulphate, grs. five, every hour for three or four doses. Strychnia sulphate, 1/30 grain, and even ergot in small doses, has been used by some practitioners.

Quinine has been of some service in my experience, but I have always thought that the bleeding postpartum seemed excessive following its use. Strychnia is of some service, but nothing has served the profession quite so good as pituitrin. This preparation has been on the market for several years, and has produced some very good results and some dire calamities. If we would report our failures as well as our successes with this drug, it would make interesting reading.

Pituitrin is the remedy par excellence for inertia in a majority of cases under the following conditions. We must have a normal presentation and position. The cervix must be dilatable or dilated. The relative proportion between the size of head and pelvis must be normal, that is, the head should be moulded. Forceps should always be ready, and likewise an anesthetic, before giving this drug. Owing to extensive thinning of the lower uterine segment, a rupture of the uterus may take place from the powerful contractions liable to be set up, and forceps always should be ready for immediate delivery.

The drug should be administered hypodermatically, preferably intramuscular, and in one-fourth c.c. doses. This may be repeated if need be at intervals, so that the pains may be increased according to the need of increased expulsive power. In a certain per cent. of cases, this action does not take place, and powerful tetanic contraction of the uterus may occur hours or days after labor is ended.

A certain number of infant asphyxia have been reported following the use of pituitrin, but whether in spite of, or on account of, we are still in doubt.

Pituitrin may be used in postpartum hemorrhage and may be given intravenously if necessary for quick results.

Before Cesarean Section is done, pituitrin 1 c.c. and ergot 15 c.c. are both given hypodermatically and the pituitrin is repeated as soon as the child is delivered. This insures contraction of the uterus and thickens it so it may be more easily sutured.

For the relief of labor pains in the second stage, when the head is down on the perineum, an anesthetic is indicated. Our safest and most reliable is of course ether. It can be given freely, and as it is usually given by an untrained person, it does not require as much watching as other anesthetics. It is given as usual at the beginning of a pain and stopped when the pain subsides. It is five times as safe as chloroform, but I venture to say, if an honest poll of the members of the State Society were made, chloroform is still the anesthetic mostly used. It has its dangers, but patients like it better than ether, and once they have taken it, they want it again.

The danger from a degenerated heart muscle, and of chloroform poisoning, must always be thought of in giving it. When given near an open flame, it decomposes and throws off chlorine gas, which is very annoying and causes great irritation to the bronchial tubes.

Nitrous oxide gas and oxygen is a combination being used rather extensively at present. This is given in the same manner as ether and chloroform, during the pains, with the exception that a special nose or mouth piece is to be used, and a special outfit is required for its administration. Small portable outfits are now on the market and can be packed up in a small space and taken along in the doctor's car. They consist of a mixing chamber by which the proportions of nitrous oxide and oxygen can be changed at the will of the operator, a mouth piece, delivery tube, and a frame on which hang the bags and cylinders containing the respective gases.

The anesthesia produced by this method is pro-

found, pleasant, and leaves no ill effects, such as nausea or headache.

Our cases should be picked when we use this anesthetic. Ochsner says it should be limited to cases of pulmonary congestion and nephritis in general surgery, and we would also include its prohibition in high blood-pressure.

The scopolamin morphine administration to prevent pain, or to produce amnesia, has not been so popular in this country as abroad. This method is not new, having been discussed twelve or fourteen years ago in our leading medical journals. Its use is very grateful to a certain type of patient, and should not be condemned altogether. It can occasionally be used with good results under proper surroundings and with proper help.

The liability to infantile asphyxia must always be borne in mind in the use of the so-called Twilight Sleep method.

The indication for the use of drugs in postpartum hemorrhage is often urgent.

Some obstetricians advocate the routine administrations of ergot following the delivery of the placenta. This to my mind is not necessary. The conduct of our labor pains, the type of patient, and length and severity of our labor, determine in a great many cases the indications for its use. We very seldom make a mistake in giving it too early, so we might give it if there is any doubt. It is hard to get and maintain fresh specimens of ergot, and I think they should always be bought in ampoule form, and given hypodermatically. Since pituitrin has become so popular, it may also be used, as it seems to cause the contraction to occur more quickly than ergot, and it seems more uniform in its results. It can be given intravenously to hasten its effects.

Strychnia 1/20 to 1-15 grain, may be given along with either ergot or pituitrin and may make their action more pronounced. Dr. Chase & Schmolowitz of the State University have determined and proved that it acts as a sensitizer of the cells of the anterior portion of the cord and that when given with a stimulant, it increases its efficiency. Thus its value is demonstrated in the treatment of postpartum hemorrhage. The use of these drugs has to be supplemented by the ordinary surgical measures to stop hemorrhage; packing of the uterus, compression of the abdominal aorta, elevating the foot of the bed with hypodermoclysis still play the most important part in the treatment of this catastrophe so much dreaded by all of us.

The indications for drugs in the puerperium are not very many. For after pains, if too severe,

morphine or codeine may be given, but it is advisable to give as small a dose as possible, as the constipation following the use of these drugs is very annoying, especially at this time.

The antiseptic care of the nipple should be vigorously carried out by bathing them in a solution of boric acid, both before and after nursing. Careful attention should be given to prevent cracked nipples, and if they occur, immediate attention is demanded, as the cracks may harbor germs and be liable to cause mastitis.

The cracks should be cleansed with diluted hydrogen peroxide, the nipple to be touched with 2 per cent. solution silver nitrate at night, and a salve of equal parts of bismuth and castor oil may be applied. The child should be withheld from the nipple from thirty-six to forty-eight hours if possible.

OBSTETRIC ACCIDENTS AS A CAUSE OF GYNECOLOGICAL CONDITIONS*

WM. C. KASTEN, M.D., Fort Madison

Child-bearing is considered a normal function but as De Lee says, "Can a function so perilous that in spite of the best of care, it kills thousands of women every year; that leaves at least one-fourth of the women more or less invalided and a majority with permanent anatomic changes of structure; that is always attended with severe pain and tearing of tissues, and that kills 3 to 5 per cent. of the children; can such a function be normal?"

There are no statistics available giving even an approximate idea of the immense amount of invalidism resulting directly or indirectly from child-bearing, but we do know, that annually thousands of women reach the hospitals for the repair of injuries and for the relief of symptoms, produced as a result of the accidents or injuries of child birth. How many more, that suffer on in silence due to the fear of an operation or fear that they cannot afford surgical aid, we can only surmise.

Tandler, the anatomist, was first to demonstrate that in every case of labor there is more or less tearing of the cervix, pelvic fascia, and muscles. Including all cases, those attended by the skilled as well as the unskilled, more than 50 per cent. bear the marks of injury and will sooner or later suffer from them. The late consequences of these and other injuries, such as dislocation of the pelvic organs, especially the

*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, May 9, 10, 11, 1917, Des Moines.

uterus, bladder and rectum; infections of the genital tract, congestion and inflammatory conditions of the uterus, tubes and ovaries; prolapsus uteri, erosion, ulceration and ectropion of the cervix, probably cancer also, and a host of others with their attendant functional and neurotic symptoms, some fatal and all inimical to health, and the enjoyment of life. Most of these are unnecessary and preventable, by proper environment and immediate proper surgical attention.

It has been said that this is the price we pay for civilization, that primitive people did not suffer so.

It is undoubtedly true, as all that have had experience know, that many of the cases met with in the country, who live simply and work much out of doors, have tissues of more elasticity and resilience, all other things being equal, they suffer less injury in this respect than their city sisters who live a life of ease. But, be that as it may, I believe that the conditions have existed since the time when the Lord told Eve, in the Garden of Eden (Gen. 3-16), "In sorrow thou shalt bring forth children."

In view of all this, every labor must be considered as a pathological condition.

Obstetrics is probably the oldest branch of medical science, existing as long as the human race. A vast majority of medical graduates do obstetric work, therefore a knowledge of obstetrics is of more importance than many other branches to which more time is devoted in teaching.

Although obstetrics is a concrete art, embracing that part of each separate branch of medicine which may apply to the successful management of conception, parturition and puerperium, one must have a good knowledge of all other branches, coupled with a clinical experience, to ground him in the art as well as the science.

In no branch of medical practice is one so likely to have his resources taxed so often, at such inopportune times and amid such unfavorable surroundings as in the practice of obstetrics. A vast majority of confinements always have been and probably always will be, in private dwellings with little or no special preparation.

The maternal mortality rate was enormous until after Semmelwies and Oliver Wendel Holmes, in 1847, traced the constant prevalence of child-bed fever to the unclean hands of students and physicians: later E. Klebs recognized that local and general sepsis was due to microorganisms.

However, no material gain was made in practical results until the deductions of Lister, based on the brilliant researches of Pasteur, that wound infection was due to virus animatum, and the ra-

tional application, by Lister, of measures to prevent wound infection. This was the birth of the antiseptic era, which grew rapidly and in its evolutionary form as applied today, makes general sepsis, in surgery and obstetrics, a criminal offense due to ignorance, carelessness or faulty technic. Until this mortality rate was reduced, the morbidity was a comparatively unimportant matter.

But has obstetrics advanced in accordance with the other branches of medicine? And as much as its importance to the welfare of the human race should demand? I say without fear of successful contradiction it has not. And why?

Many reasons have been advanced, chief among which are: the profession and the laity have always looked upon child-bearing as a normal function; whereas it is the most difficult, arduous and most poorly recompensed of any branch of medical practice, and the teaching has not always given it the importance it deserves.

In the American Medical Association Journal of June 6, 1914, Dr. J. Whitridge Williams, in a most comprehensive summary of obstetric teaching in this country, has pointed out the great need for better methods and facilities, and, that with the rapid progress in medicine and surgery, the needs of obstetric clinics have been relegated to the background.

I do not wish to imply that no progress has been made, for there has been a tremendous awakening in obstetrics. The public is becoming educated to the fact that the conduct of labor is really a major procedure and that it should be conducted with the same aseptic scruples as a major operation. Hence they are more willing to go to hospitals for confinements and the attendant is more often engaged and his advice sought earlier than formerly.

The midwife, for traditional and economic reasons, particularly in the larger cities among the foreign population and the poor, is still considered a necessary evil. But even the foreigner is becoming enlightened and various methods are being used to educate and control them: such as the proposed course of midwifery in the Washington University of St. Louis, supervision by the health departments, as is done in Buffalo, Pittsburgh and Providence, following the system used in England and New Zealand.

There has been a great increase in maternities and other hospital facilities for obstetric work. The new Magee Maternity in Pittsburgh is considered a model.

The subject of prenatal diagnosis and care is receiving more attention and quite an amount of literature along this line has accumulated.

The value of post natal care has been clearly set forth by Kellog, of the Boston Lying-in Hospital, whose clinic was established in 1911, and up to November, 1916, had handled 9,250 cases, the good work of which he has clearly shown in an article in the Inter-State Medical Journal of December, 1916.

The development of the use of analgesia and anæsthesia has relieved labor of much of its suffering and ill results.

Pituitary extract is probably one of the greatest advances and, if properly used, greatly shortens the labor. In many cases it averts the use of forceps, and in my own experience, has lessened the number of lacerations. But, notwithstanding all this advance, the morbidity resulting is still greater than it should be and the question is, how can we mitigate or prevent it?

It is not the purpose of the paper to go into technical details, which would unnecessarily lengthen it, and would serve no practical purpose as all those interested can find them clearly set forth in the modern text-books on obstetrics, but I can particularly refer to the chapter on obstetric accidents in De Lee's matchless work.

The fact is that we have not kept abreast of the advances, or if we have, we have not made practical use of the knowledge that is ours. We have, too often, not given the time and painstaking care in the conduct of our cases, either because of our environment and lack of facilities or because of our hurry to get away. It would be ideal if every confinement could be conducted in a well equipped hospital, but as previously stated, the majority of cases have been and always will be cared for in the home without much preparation. We must use our ingenuity to make the best of surroundings. We must give more attention to prenatal diagnosis and care. This alone will enable us to know some of the obstacles to be met, and being forewarned, we should be forearmed.

After every confinement we should be prepared with a good light, such as one of the many handy pocket electric lights now on the market, a pair of suitable retractors, such as Priors trowels or De Lee's various sized speculæ or even the regular Sims speculum, to retract the vaginal walls and make a thorough inspection of all lacerations which should be repaired at once, or not later than twenty-four hours after delivery; possibly excepting some lacerations of the cervix and small mucus membrane tears and abrasions. We should not dismiss our case as soon as the fee is paid, if it is paid at this stage, but she should receive postnatal care.

Every woman that has borne a child should be examined during the fourth to sixth week postpartum, to ascertain if healing of the lacerations have taken place properly, if the uterus is undergoing proper involution and as to its position. This is the time to deal with retroversions; if they are now put and kept in place, as the uterus and its ligaments are shrinking to normal, the probabilities are that it will remain so.

The patient should be examined at weekly intervals to see that it does remain so during this involutinal period. If not, a properly fitted pessary will usually insure results and it may be necessary to wear it six months. This means a lot of extra service and all who can should be made to pay for it, and if the facts are properly presented, the fee will usually be forthcoming and your reputation for this line of work correspondingly enhanced.

To this end we must strive to make obstetrics more attractive so that those entering this branch of medicine will not leave it for more remunerative and less laborious fields.

MANAGEMENT OF PREMATURE LABOR AND OBSTETRIC SURGERY OUT- SIDE OF HOSPITALS*

C. W. STEPHENSON, M.D., Milton

In discussing the subject of "Management of Premature Labor and Obstetric Surgery Outside of Hospitals," it is very difficult to lay down a hard and fast technic because of varied conditions. It will be necessary to meet in these cases the factors that enter into each one, often making the management of each a law unto itself.

Taking up in brief some of the factors that tend to make each individual case different, we will consider first "home conditions," as they more than any other probably influence our preparations for a premature delivery, and as the homes are different, according to the station in life of our patients, we will have either more or less with which to prepare, from the modern home with sanitary surroundings to the smaller cottage of the less fortunate. Also will the occupants of the home either be a help or a hindrance, for in these cases the physician often depends on one of the family for his assistance, and if he or she be of an intelligent type with some idea of asepsis or at least cleanliness, it will make our lot a great deal easier than if we have to contend

*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1917.

with someone whose traditional superstitions prevent them from accepting the idea of modern asepsis, as it is still often hard to convince some patients that whatever old bedding they happen to be lying on, is not good enough for the job in hand. The tendency is sometimes to save the clean linen for the change after delivery, not seeming to realize that while the various manipulations of delivery are in process, that the chance for infection is greatest. In these cases it devolves on us to show them the error, and change conditions as best the circumstances will permit. The advice of the physician is usually accepted, and if we neglect the opportunity to educate our patients along these lines, it is our fault if in future deliveries, in the same home, we do not have a greater amount of aid from the family, and a general betterment of conditions in the confinement room.

The cause of premature labor will considerably influence our management, for if the cause be known, we will be able to anticipate the time and can instruct our patients how to prepare, and to arrange our technic more as we would have it, as in a case of pernicious vomiting or in contracted pelvis, when we could practically set our own time for emptying the uterus. We would have our confinement room better arranged, plenty of clean or sterile linen, sterile water, and our technic more arranged as it would be in the hospital. But if the cause is unknown both to the patient and physician, it becomes another matter, as the patient is often compelled from hemorrhage to get into the recumbent position as soon as possible in whatever circumstances she may happen to be, often fully dressed, and the physician hurriedly summoned, finds himself suddenly called upon to do an aseptic delivery without previous preparations and with very little time to make any except what he can arrange with and whatever happens to be at hand, often finding it necessary for lack of other help, to become nurse as well as doctor, getting the patient into a clean bed, assist in clean dressing, prepare water and antiseptic solutions besides performing the duties that fall to him as a physician in whatever way the needs of the case may demand. Thus we have a cause making a great difference in our country work. In premature deliveries, by knowing the cause we can prepare with care for the case properly, while if not, we are thrown into the midst of the case to do the best we can.

"Term period," or the time at which delivery occurs, is another important factor in premature delivery, with which we have to deal, for upon this knowledge does the physician base his first

calculations as to what he will need to give his patients conscientious care. In making use of the three divisions of the pregnant period as they are often classified, we will take first the decidual period or about the first three months, at which time a great many cases occur. Our preparations for emptying the uterus at this time will require us to arrange our technic to do in most cases some form of curettage, putting on the physician more work and work that the average physician, I believe, most dislikes. The second period, or period of placental development up to the period of viability, in my opinion, is an easier time to take care of delivery than the first, as it will be easier to remove a formed placenta than to curette away a mass of half adherent membranes. Although there may be a difference of opinion on the last named point, I merely state these time periods to show the difference that it may make in our management. The third period, or from about the seventh to the ninth month, or the period during which, if premature delivery occurs, we may have born a living child, brings us to term delivery, a discussion of which is outside the limits of this paper, and from the likeness of the two in technic, we will only say that if labor occurs in this third period, it increases the responsibility of the physician inasmuch as he now has two lives for which to care instead of one, but his technic otherwise will differ little from the second or period of placental development.

Having shown why it is impossible to lay down a uniform technic for all cases in country practice, some of the many and varied features that are woven about each individual case, we will take up what we call, for want of other nomenclature, "Average Conditions," as we find them in ordinary homes, in the way of sanitary conditions, intelligent help, with a patient endowed with what we call good common sense, linking these together with cause to which it would probably be the hardest to apply the term "average," as they are so many and varied, especially among these that we have called unknown, even criminal abortions are usually unknown to the attending physician, and denied by the patient. In most localities it would not approach the average, but taking spontaneous miscarriage into consideration, I believe they will outnumber those of known causes. Choosing from the three term periods, that is, about or a little before the third month, when we usually encounter some retained membrane after the expulsion of the fetus, as the time during which I have encountered the largest number of premature deliveries as furnishing the average, we will then assume that the

physician has been hurriedly called in. Here is a picture that the country practitioner sees often. The patient must be taken care of conscientiously and successfully, for the man in country practice who fails to take care of the mothers of his community will soon see his career as a physician finished. But regardless of the difficulties, it can be done and is being done by physicians in the country every day.

To endeavor to lay down a uniform technic would be impossible even in these cases that we have tried to bring under a general average, but each man has his own procedure, one that he has taken from the standard and modified to suit his working conditions, and only in that way do I believe a physician can be successful, as in many cases he will find himself in situations which he has never been in before and he will have to call on his own skill and ingenuity to take him through.

In most cases we will be able to have the services of at least one woman whom we can direct to assist the patient into a clean gown and bed, giving the physician time to take a mental inventory of his surroundings.

As I believe that every man has his own ideas in these cases and often acts as the occasion demands, I will only offer you a general procedure which because of its simplicity and the quickness with which it can be arranged in any country home, is desirable, while much less elaborate than some, has proven very efficient in my own use.

While the patient is being got into a clean bed and dressing, a pan, if sterilizer is not in our equipment, can be placed on the fire in which can be placed rubber gloves, rubber bag syringe, medium large dull curette, uterine irrigator, dilator, placental and dressing forceps, a tea kettle partially filled placed to boil to provide sterile water, and the obstetric pad which should be a part of every country physician's equipment, washed in an antiseptic solution. He can then return to the patient, place her crosswise the bed with rubber pad under hips, and after carefully scrubbing hands with brush and antiseptic soap, rinse off in two per cent. lysol solution, prepare a bowl of hot water and scrub external parts, hips and thighs of patient with a gauze sponge and liquid soap, then with scissors remove long pubic hair, and rinse with one per cent. lysol solution. Some operators at this point also use an antiseptic vaginal douche, and I would not condemn it, but unless there is evidence of infection already existing, I would not destroy nature's natural defense in the vaginal secretions.

A normal examination with gloves can now be made to determine the stage of labor, and condition of cervix and so on. If the fetus has been expelled or is where it can be removed with the examining fingers, there then remains usually decidual membranes to be removed, and again the finger with the fundus pressed well down in to the pelvis, is the best instrument. But if unable to remove, or if ragged parts remain, the dull curette, especially in the multipara, can often be used to finish clearing the uterine walls. If the fetus has been expelled, but a tight cervix resists our efforts to remove the decidual membranes, resort to the gauze tampon; packing the cervix and vagina and leaving our patient until the next day will often answer our purpose, and I believe in country practice it is usually safer and far more convenient for the busy practitioner than the calling in of another physician, the anesthetizing of the patient, forcible dilatation and emptying, with its attending dangers of infection.

After emptying, a hot normal salt solution can be used to wash out uterus, as many men insist an antiseptic douche in the womb is unnecessary unless you have infection already present. I believe that if the above technic or a similar one is employed, that the operator will have few cases of infection on his hands. I would not presume to say what antiseptic should be used or what brand of antiseptic soap; any of the reliable preparations are of course acceptable, but in country homes where sterile dressing and utensils are, at a premium, we are compelled to rely on chemical sterilization more, and each man usually has his favorite. Our object in these cases is the same no matter what the means used to obtain it; mainly to thoroughly empty the uterus and thoroughly clean the uterine wall so that our patient will avoid disagreeable hemorrhages and possible infection following her confinement.

Obstetric surgery as a branch of our country work is often carried out under greater difficulties than delivery, for it must be performed on a patient who is already tired and often completely exhausted physically, with a mental condition that is sometimes not inclined to tolerate any more work or suffering at this time.

The obstetric surgery that we are most often called upon to do relates to tears either of the perineum or cervix uteri. These two conditions are very common in spite of our efforts to prevent them. Tears of perineal structures being the most common and visible, are more easily repaired and I believe an attempt should be made to repair them immediately if the physical condition of the patient will warrant. Our main trou-

ble will be as a rule not in getting a proper approximation, although that is not always perfectly easy, but in getting our stitches to hold till union is strong. For this work we will need either perineal needle or large curved needle and forceps and silk worm gut and catgut. These can be boiling while waiting to deliver placenta. When ready to begin repair, the parts can be sponged off, to clear the field, with hot sterile gauze sponges. A careful examination of the tear made to determine the location of the stitches, if completely through sphincter, and a very sincere effort should be made to obtain as good a union as possible or the patient will suffer afterwards from this one thing untold annoyance, also we should watch to not only close the skin gap but to be sure the floor inside the vagina is united as a skin perineum is of cosmetic value only.

Here again comes our want of hospital after-care in the management of our cases after the stitches have been placed. In some cases it is true we are privileged to have a professional nurse to care for our patients and look after the wound, but in a great many more we are not, and unless we have a practical nurse whom we have trained to be of service to us in these cases, what will we do with our stitches? I would prefer to have given an external pitcher irrigation of sterile water twice a day or after urination, but rather than to let some dirty handed domestic attempt it, I have simply directed that they be left alone, in some cases not even seeing them more than twice myself, and I can personally report some good unions obtained in this manner, though it was not of my own choice that they were left in that condition, but of necessity.

Of perineal tears in general, of all degrees, we will have all kinds of results, good, bad, and medium. These are governed by things over which we have no control, the after-care, the restlessness of our patient and the wound bathed as it is, in the lochial secretions, is not favorable to rapid healing, but every case in which we secure good or even medium results, we have conferred a great benefit on our patient and it has been worth the effort.

Of cervical tears there is a great difference of opinion, but unless trained help is at hand and surroundings are such that asepsis can be strictly adhered to, I am not strongly in favor of attempting repair at time of labor, with this exception that it is of such severity that hemorrhage is occurring from it; then it will have to be drawn down and repaired under the strictest asepsis possible under the circumstances.

SUMMARY OF SYMPOSIUM ON OBSTETRICS*

FRANK M. FULLER, M.D., Keokuk

We don't often hear obstetrics discussed at a meeting of the Iowa State Medical Society. In fact, our worthy president, in going over the program for the last several years, found that it had not been discussed at all. We are a body of men made up not of specialists, not of surgeons, not of internists, not of those engaged in particular branches of work, but to a great extent are made up of general practitioners, men who are doing all kinds of work, and obstetrics is a necessary part of the work of a large number of the men in our Society. That was the reason this symposium was placed upon the program, because we felt that there was need for this sort of discussion.

In summing up this symposium, the first thing I wish to speak of is the fact, brought out by one of the essayist, that pregnancy is a normal condition bordering upon the pathologic. It is a condition that should be under our observation. It should be under observation during all the period in which there is a possibility of pathological conditions developing. To that end I feel very certain that the objection raised by the physician that he does not see his cases is not to the discredit of the patient, but is much to the discredit of the physician. The condition of obstetrical practice in the United States today is due to the fact that the physician either professes an indifference to this extremely important part of his practice and neglects it, or he does not insist upon his patients sharing with him the great responsibility that they always put upon him after the damage has been done. And I believe that every one of us who does any obstetrical work, recognizing the dangers of pathological possibilities, should insist upon the patients within our knowledge coming to us and putting themselves under proper direction and care during pregnancy.

In regard to the conditions we find after pregnancy. As Dr. Kasten said, we know that there are a great many gynecological conditions which arise as the result of an obstetric accident; we know that many patients are going around suffering as a result. And yet I want to stop just long enough this morning to speak a word in tribute to the men who are doing obstetric work outside of hospitals. You could not today prevail upon a major surgeon to undertake to do his work in the homes and with the conditions under

*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1917.

which every man in general practice is doing obstetric surgery. And let me emphasize the fact that child-bearing is essentially an obstetrically surgical condition, and that the men who are doing this work, compelled as they are by the education of the people, by the conditions of life, by the natural conditions of their practice, and because this is a branch of emergency work—compelled as they are to do the work as they are doing it, should be receiving more credit than the stars in the surgical firmament receive for the work they are doing under ideal hospital conditions. And I take off my hat today to the man who gets in an automobile and drives fifteen to twenty miles in the middle of the night and meets a condition that in its possibilities has five times as much responsibility and five times as much danger as the case of gall-bladder disease or of appendiceal trouble that is carefully transported by train to the hospital, the man who does the work receiving \$200, while the other man goes out at a moment's notice, and perhaps with no conveniences in the home, does an operation in which two lives are at stake and for which he receives a miserable pittance. So I think, while men are doing the very best possible under the circumstances and conditions, we ought, particularly where at all feasible to take our obstetric cases to the hospital, to insist, as the profession had to insist a few years ago in other conditions, on taking these patients to the hospital for this work. Young as I am, I can remember when in general surgical work they cleaned off the dining room table, took down the curtains and let the sunshine in, and the surgical operation was done in the dining room or parlor. Now we would not think of doing similar work anywhere but in a hospital, and if today you insist that obstetrical cases are surgical and should for the protection of the patient be taken into the same hospital, you will begin to develop a condition which will be a vast improvement over what we have today.

Discussion

Dr. Laura H. Branson, Iowa City—I feel that I cannot let this opportunity go by without saying a word on this great subject. A great injustice has been done by medical writers of the texts used in colleges in past years in designating child-bearing a normal process, a physiological function. We were taught that but one woman in twenty lost her life in child-birth, and that nature could almost invariably be relied upon to carry a patient through pregnancy, labor and the puerperium. This certainly was a libel on nature, for that she has failed can be proven by reference to the results. In the summary of a recent paper published in the *Journal of the A. M. A.*, we note that the deaths from child-birth

occurring annually in the United States are 15,000. DeLee, in his recent work on obstetrics, places this number as high as 20,000 annually in the United States, and DeLee says further that over 50 per cent. of the women who have borne children bear marks that testify to the fact that this is not a normal process. I feel that the whole reproductive cycle is fraught with danger to woman. In the earlier days following labor, her life is in danger from septicemia, for annually in the United States 7,000 lose their lives immediately following labor, from septicemia. A little later we note that carcinoma claims many women from the ranks of the child-bearing. This is particularly true at the menopause, when many women lose their lives from carcinoma. And it is a most deplorable fact that while we have made great strides in the treatment and surgical technic applied in other lines of medicine and surgery, we have failed to lower the death rate from child-birth, a most deplorable fact. When the physician awakens to the realization that there is much of pathology in pregnancy, labor, and the puerperium, more than he has ever conceived of from the viewpoint of the busy practitioner, he will surely use more efficient means in the prevention of this great mortality among women. And when the public has been taught that this everyday affair is a pathological process rather than a physiological function, it will demand for women the best of medical service and, if necessary, the highest surgical skill in order that this wonderful process of child-bearing may be performed with the least resultant pathology. This will come eventually; for now as never before nations are making an estimate of their resources to be utilized in time of need; and the woman unit is gaining recognition as one of the greatest resources of a nation. Therefore it must necessarily follow that as the value of the woman unit is becoming recognized, the demand for the conservation of the lives of women will become more and more urgent.

Dr. C. C. Heady, Bloomfield—One point that should be mentioned in connection with this subject is the management, during pregnancy, of cases in which there is a likelihood of puerperal convulsions. This is, I believe, one of the most important things that we as physicians of the country have to deal with. The great trouble in many of the cases is that we do not have any knowledge of them until called to the case, probably in convulsions. If we could get the people educated so that they would consult the physician and let him care for the patient, I think we would have none of these cases. I have never had a case of pregnancy develop convulsions if permitted to look after it regularly. So if we could have charge of these cases and take them through to the period of delivery, we could so manage them that they would not have convulsions. If we could only get the people trained to come to us and consult us during the time of pregnancy, these patients would be taken through to delivery without danger. As to abortion, referred to by Dr. Stephenson, so

often we are called to cases with which we have had nothing to do and find septic conditions already present. Just to illustrate this by one case: On Saturday I was called to see a woman who had aborted on Wednesday, and I found her with temperature of 104 and pulse rate considerably above 100, very foul smelling, retained membranes, etc. And, as in all such cases, it was necessary for me to proceed as best I could to remedy the conditions found.

EMBOLISM OF THE SUPERIOR MESENTERIC ARTERY, WITH REPORT OF CASE*

F. R. SPARKS, M.D., Waverly

This paper is presented, not with the idea of inflicting upon you any grand oratorical effort or to display any excessive amount of wisdom and diagnostic ability, but rather to bring before you for discussion a surgical anomaly of extreme rarity, which was proven by operation and to impress upon us all the great importance of very early operative interference, when confronted with what Dr. Sullivan of Chicago designates as "an acute abdomen."

The superior mesenteric artery springs from the front of the aorta about one and one-half inches below the origin of the celiac-axis and opposite the first lumbar vertebra. It supplies the duodenum and pancreas in part, and the whole of the jejunum and ileum, and the large intestine as far as the splenic flexure. The branches are as follows:

1. Rami Intestini Tenuis—There are ten to twelve of these, each dividing into two branches. These two branches anastomose with adjacent branches, forming a series of arches from which secondary branches are given off. This process of division and union is repeated three or four times, thus four or five tiers of arches are formed, from the most distal of which terminal branches are given off to the walls of the jejunum and ileum.

2. The Inferior Pancreatico Duodenal Artery—This has two branches, anterior and posterior, supplying the head of the pancreas and the third part of the duodenum.

3. The middle colic artery, supplying the transverse colon.

4. The right colic artery, supplying the ascending colon and the beginning of the transverse colon.

5. Ileo-colic artery, supplying the lower part of the ascending colon.

6. Terminal artery, which has five branches: 1. Ileal; 2. appendicular; 3. anterior ileo-cæcal; 4. posterior ileo-cæcal; 5. colic, supplying those portions of the intestines, corresponding to the names of the different branches.

The inferior mesenteric artery arises from the front and towards the left side of the aorta an inch and one-half above the bifurcation. It passes downward and outward and becomes the superior hemorrhoidal artery. Its branches are:

1. The left colic artery, supplying the descending colon.

2. The sigmoid branches, supplying the lower part of the descending colon, the iliac colon and the pelvic colon.

3. The superior hemorrhoidal artery which is the direct continuation of the inferior mesenteric and supplies the mucous membrane of the pelvic colon, the rectum, and the muscular coat of the pelvic colon.

The superior mesenteric vein commences in the right iliac fossa in connection with lower part of ileum. Its tributaries correspond with the branches of the superior mesenteric artery.

This slight discourse on anatomy is for the purpose of refreshing in your minds what you all undoubtedly know, and in bringing before you the arterial supply of the large and small intestines so that later on when the case history is presented, the correctness of our diagnosis and findings may be established. The occurrence of an embolism of the superior mesenteric artery is of such rarity that it is well to be sure of the land-marks before arriving at positive conclusions.

Etiology—The predisposing causes are, first; age, most cases occurring between the ages of thirty and sixty, Osler and McCrae, vol. iii, found that over half the cases were between thirty and sixty years of age. Bryant and Buck, vol. ix, 1910, give the same figures. Second; male sex. More cases occur in the male than the female. Jackson, Porter and Quimby found 64 per cent. in men and 36 per cent. in women.

An old endocarditis is probably the most common real cause of embolism of the superior mesenteric artery, though an atheromatous condition of the aorta or even of the trunks of the mesenteric arteries themselves may be the cause. Bryant and Buck say, "Embolism is usually due to endocarditis." Butler of Brooklyn, 1914, edition, says, "The superior mesenteric artery may be occluded by emboli or thrombi from diseased heart valves or aneurism of the abdominal aorta resulting in an hemorrhagic infarction of a portion of the jejunum and ileum. Monographic

*Read before the Austin Flint-Cedar Valley Medical Society, at Waverly, November 13, 1917.

Medicine, 1916 edition, gives as etiology, emboli from endocarditis possibly arthero-sclerotic lesions of the aorta." Osler and McCrae, vol. iii, 1914, probably give the most complete description of this condition, and I shall refer to them frequently. They state that "Endocarditis and atheromatous conditions of the aorta or of the trunks of the mesenteric arteries are important conditions antedating emboli. Arterial thrombosis is liable to occur when there has been severe enteritis or infective conditions of the intestinal tract."

The superior mesenteric artery is much more frequently affected than the inferior, and embolism is by far more common than thrombosis. Keen's Surgery, 1909, says, "Embolism usually in surperior mesenteric artery as this is a terminal artery and therefore the results following obstruction are much more serious than of the inferior. The inferior artery may establish a collateral circulation through the branches of the middle and inferior hemorrhoidal and superior mesenteric artery."

In an analysis of 214 cases published by Jackson, Porter and Quimby in 1907, there were 197 instances in which an accurate study of anatomical details were obtainable. Among these, 120 or 61 per cent were arterial obstruction, 77 or 39 per cent. venous. Embolism was much more frequent than thrombosis. In 83 cases studied by Gallavardin, 63 were embolism.

The pathology is what would be expected from embolism of any end artery. A hemorrhagic infarction of the area of intestine supplied by that particular branch, with a rapid accumulation of free abdominal fluid. This soon passes into gangrene, perforation and peritonitis. Osler says, "Superior artery affected much more frequently than inferior, and the whole lesion is practically a hemorrhagic infarction of the affected area. When the mesenteric vessels or vessel is blocked by emboli or thrombi, a condition of infarction follows which may pass into gangrene, perforation and peritonitis. If the main artery is occluded the result is necessarily fatal."

The symptoms come on very suddenly and with no warning to the patient. There is acute colicky pain, at first over the entire abdomen, later possibly localizing. This is soon followed by vomiting which in most cases soon becomes bloody or of a fecal nature. The temperature is usually subnormal. Pulse rapid and weak. A bloody diarrhea sets in early in one type of cases, in others there is complete obstruction. Tenderness over entire abdomen with early distention due to gas and the accumulation of a free bloody fluid. Kelly and Noble say, "Symptoms of

thrombosis and embolism essentially the same. In embolism there is intense colicky pain with all the symptoms of intestinal obstruction, to which are generally added the presence of dark tarry blood in the stools. The case is usually diagnosed as one of intestinal obstruction."

Keen's Surgery, 1909, gives as symptoms "Colicky pain, diarrhea, profuse hemorrhage from bowel, paralysis of intestine, rapidly developing ileus." There is nothing mentioned by Keen in regard to vomiting being an early symptom. Bryant and Buck, vol. vii, 1910, divide the cases into two types, the acute and chronic, of which the acute is much more common. "Onset sudden and violent, severe abdominal pain, nausea and vomiting, hematemesis, diarrhea with melæna. Osler and McCrae also divide these cases into the acute and chronic." Majority are the acute type, sudden abdominal cramp or colicky pain followed by nausea and vomiting. Vomitus at first consists of stomach contents, speedily becoming hemorrhagic, diarrhea sets in soon and also becomes hemorrhagic. In other cases hemorrhage does not occur and the symptoms are those of acute intestinal obstruction. Temperature falls rapidly and the patient frequently sinks into collapse early. In over half of the cases, pain is general, in others limited to one or another region of abdomen. Local tenderness may develop. Hemorrhagic diarrhea is the most conspicuous and significant symptom although it is not always present. When the hemorrhage is marked, the blood may be quickly passed and is only slightly altered. Distention of the affected area of bowel sometimes develops rapidly and general abdominal distention occurs in the case in which intestinal obstruction is the important consequence of the vascular occlusion. In some instances a palpable tumor has been discovered in the abdomen, the mass being caused by the infiltrated mesentery and bowel. In the more chronic cases, which include most of the instances of venous thrombosis as well as some cases of arterial occlusion, the onset may be insidious and the symptoms of a remittent type. At times there are no abdominal symptoms of any sort or at most vague and indefinite manifestations. The clinical course may be exceedingly rapid. Jackson, Porter and Quimby found in their analysis that 20 per cent. of the cases of either arterial or venous occlusion had a duration of but twenty-four hours and 18 and 22 per cent. of the venous and arterial, respectively, a duration of but two days. In the very acute cases, after the intial pain and vomiting, rapid distention of abdomen, cessation of peristalsis and speedy death marked the course of the disease."

The diagnosis, because of the rarity of the disease and its great similarity to intestinal obstruction and even appendicitis, is not usually made previous to the exploratory operation. Butler says, "As the clinical picture is almost exactly like that of intestinal obstruction, diagnosis is seldom made prior to operation, unless the presence of the causative condition may suggest the true nature of the case."

Monographic Medicine, 1916, states, "Should symptoms of either type," meaning the acute or chronic, "above described, occur in a person who has an endocarditis or other lesions forming embolism, the nature of the condition may be suspected."

Murphy, vol. iii, 1914, gives a brief summary of one case in which the diagnosis of appendicitis was made. In this case the pulse was 140 almost at once, but no elevation of temperature. He says, "now the pulse never reaches 140 in the first ten minutes of appendicitis."

Osler and McCrae follow the rules laid down by Gerhardt which are as follows: 1. There must be a source of embolism. 2. Copious intestinal hemorrhage unexplained by organic disease of the bowel or portal obstruction. 3. A rapid and marked fall of temperature. 4. More or less severe colicky abdominal pain. 5. Distention of abdomen and the accumulation of free abdominal fluid. 6. The occurrence of embolism elsewhere, before or simultaneous with the obstruction of the mesenteric vessels. 7. Discovery of a palpable mass."

The prognosis is of course exceedingly grave. Osler says, "With few exceptions the disease terminates fatally. In the statistics before quoted, there are recorded fourteen cases in which the diagnosis seemed reasonably accurate and in which recovery ensued. This favorable termination can occur only when a collateral circulation is speedily established. "He cites forty-seven cases of exploratory operation in which four recovered. In Dr. J. W. Elliot's successful case, forty-eight inches of bowel were resected. Kelly and Noble say, "Prognosis is very grave, a few cases of infarction have recovered following resection of the bowel."

Keen's Surgery, 1909, "Exploratory incision at once and an early resection offer the only hope of recovery." Bryant and Buck, vol. vii, 1910, "Surgical measures are usually of no avail. If prompt operation and extent of bowel limited, and a line of demarcation distinct, a resection may be done. Under these circumstances the divided bowel ends must be anchored in the abdominal wall as a temporary measure."

The treatment is surgical, and operation must be very early. Especially is this most true in the acute arterial embolism. A resection of the portion of bowel affected and then a lateral anastomosis, or as Bryant and Buck suggest, an anchoring of the divided bowel ends in the abdominal wall, offer the only possible hope of relief. Such an operation must be performed in the first twenty-four hours following the first abdominal pain or better yet within the first twelve hours. Osler says, "The treatment is purely surgical." Jackson, Porter and Quimby refer to forty-seven cases in which an exploratory laparotomy was undertaken. The mortality in these cases was 92 per cent., four patients recovered."

Case History—F. W. Female, age forty-nine, married, American, tall, thin, rather frail, anemic woman. Family history negative. Past history—Is the mother of three children, living and well. Youngest eighteen years of age. Had diseases of childhood when small. Thirteen years ago had what was pronounced as heart trouble and ever since has been troubled with shortness of breath on moderate exertion. Two years ago I was consulted for a general run down condition. At that time found a thin, frail, rather nervous woman, with a well defined case of endocarditis, however there was no edema and only shortness of breath on rather severe exertion. Heart was enlarged and with a very audible murmur. Marked pyorrhea was present and a rather high grade of anemia.

Three months later she had all of her teeth extracted under ether anesthesia, which she stood very nicely. Her general condition almost at once improved, her anemia became less and less, and under general tonics and proper living she became a comparatively well woman, so that for the past six months she has taken no medicine, was doing her own house work, eating and sleeping well and was in a general state of good health, she stating that she had not been so well for the past ten years.

On July 8, 1917, was called to her home in the country to see her about 2:00 a. m., reaching there about 3:00 a. m. At that time she was suffering intense abdominal pain, which she said came on about 10:00 o'clock that evening. She was out in the yard at the time, when with no warning whatsoever, was taken with severe abdominal colicky pain. She was carried to the house, being unable to walk, put to bed, heat applied to abdomen, and shortly the pain moderated to some extent. Vomiting soon set in and was rather persistent, but at no time was it bloody or of a fecal nature. The pain continued but much less severe until about 1:30 a. m. when it became much worse and they then sent for a physician. Her bowels had moved twice the day previous, but not since 6:00 p. m., nor did they move again until the result of an enema given first before the operation. This absence of diarrhea and especially the passing of blood by the bowel is contrary to the

usual run of such cases. Pulse was 110, not especially weak or thready. Temperature 99.6 F. by mouth. This slight rise in temperature is another point not agreeing with the experiences of practically all the authors. Respirations 22, short and catchy. No sign of collapse or cyanosis. Her description of the pain was that it started in the lower abdomen but very soon came up in to her chest, just beneath the center of the sternum. Abdomen not distended but marked tenderness throughout, especially over the lower right quadrant. Tongue slightly coated. No headache or dizziness. The case at the first visit seemed to be one of acute, possibly gangrenous appendicitis, and acting on that theory, I administered $\frac{1}{4}$ gr. of morphine hypodermically and applied ice over the abdomen. This eased the pain somewhat and I returned home to wait until daylight. At 5:30 that same morning was called again and found her suffering even more intensely, if possible, than before. Administered $\frac{1}{2}$ gr. of morphine and requested consul. My colleague, Dr. L. C. Kern, was called in as consultant. We made a very careful examination of the patient, going into her past and present history rather extensively, and from the findings then present and the history of pain followed by vomiting, then a slight rise in temperature with marked tenderness over McBurney's point, both agreed that the most likely diagnosis was appendicitis. Advised immediate operation, which was consented to. We therefore removed her to the hospital at once and with as much dispatch as possible operated about 11:30 a. m. A little over twelve hours after her initial pain, gas anesthesia was very ably administered by Dr. M. N. Gernsey and was well taken by the patient.

On opening the abdomen we at once discovered we were dealing with something vastly different from appendicitis. A portion of the small intestine was ballooned out to six or seven times its normal size and the abdomen was filled with a bloody fluid. It was then recognized that we had a dynamic ileus probably due to embolism and such proved to be the case. Dr. Lott being in the room at the time, we requested him to assist Dr. Kern and myself, which he most ably did.

The intestine involved was the ileum and one reason for our probable diagnosis of appendicitis was apparent. The intestine for five and one-half feet was gangrenous, the gangrene extending to within about five inches of the ileo-cecal valve, in fact the most intense engorgement and dilatation was close to the valve. There was no band of constriction at any point, no new growth occluding the bowel, no intussusception, no volvulus or kinking of the intestine, no knuckling of the bowel into a foramen. Therefore, from her history and the findings, the diagnosis of embolism was established without doubt. With as much speed as possible, we removed the gangrenous intestine and did a lateral anastomosis. The length of intestine removed measured sixty-six inches. Put in a large cigarette drain, a tube and several pieces of gauze drainage, sutured

the wound very carefully except the space for the drainage, and removed patient to bed.

Continuous normal saline drop method was started at once and head of bed elevated. The note made by the nurse immediately following operation was "Unable to find pulse." At 7:30 p. m. "Pulse very weak and irregular;" at 9:00 p. m. "Wound dressed by Miss McGinn, draining very freely." Patient was given a hypodermic of strychnine, gr. 1/60; nitroglycerine, gr. 1/100; and digitaline, gr. 1/100. This was ordered repeated every four hours. To this was added digipuratum $\frac{1}{2}$ tablet every four hours as soon as she could retain water, plenty of which was given from the start. At first was unable to urinate but this was soon overcome and no more trouble was experienced from that source. She received $\frac{1}{8}$ gr. of morphine and 1/50 gr. of atropine before the operation, and at 10:00 p. m. that same night $\frac{1}{4}$ gr. of morphine with 1/50 gr. of atropine, and that was the last opiate she received. Temperature reached 99.2° F. on July 11, three days following the operation, also on July 18, 100.4° F. and on the 20th, 101.0° F. The remainder of the time it continued normal and these periods of elevation were for a few hours only.

The first twelve hours following the operation the pulse was not counted. After that it ranged between 128 and 110 until July 13, five days after operation, after which time it was between 72 and 82. She vomited for the first time on July 9, then several times on July 10. Gastric lavage with a weak soda solution was then employed. After the first washing the vomiting ceased permanently.

On July 10 she received a high S.S. enema, with the expulsion of some gas but no fecal matter. This procedure was repeated on the 11th with excellent results after which her bowels moved daily. The drainage tube was removed on July 13, also the cigarette drain. Two days later the gauze was removed, at which time the stitches were also removed.

The wound continued to drain freely and gradually assumed a fecal nature until it became entirely fecal matter and thus was established a very complete fecal fistula. This was extremely irritating to the patient's skin. We tried powder, zinc oxide ointment, and numerous other remedies but the most effective was heavy sterile vaseline applied thick and changed frequently.

Her nurse, Miss Kerr, was a model of efficiency and faithfulness, and much of the success in this case may be attributed to her care and attention.

This fistula continued for many days. The patient was feeling fine, eating and sleeping well, bowels moving in the natural way daily, but our fistula still persisted to annoy her and her physicians not a little.

On July 20, after consulting over the matter, we decided to use Dakin's solution to wash the wound and surrounding skin. This we did and thereafter once daily the wound was thoroughly irrigated with a rather weak Dakin's solution. From then on things assumed a brighter aspect, the amount of fecal matter became less, the skin became less irritated, the patient was soon sitting up in bed and then in a

chair, so that ten days later, on July 31, she returned home. The wound was dressed twice a week at home until August 13 when all drainage had ceased and the wound was entirely closed. During her stay in the hospital she received at different times, twenty grains of sodium bicarbonate after meals for heart burn, tr. of nux some m.x. before meals as a tonic and at times bismuth subnitrate gr. xxx to overcome a rather mild diarrhea.

At present the patient is in excellent health, well nourished, healthy color to the skin, bowels moving regularly, and she is doing a part of her household duties.

In conclusion wish to thank Dr. Kern for his able help and council throughout the whole course of her illness and to reiterate that which should be an axiom; when confronted with "an acute abdomen," early exploratory incision is the only rational procedure.

SOME TROUBLESOME FRACTURES*

W. H. Fox, M.D., Waucoma

From the organization of the department for defence of malpractice suits by the State Medical Society of Iowa, in 1909 until 1916 inclusive there were 135 cases commenced. Of these 135 cases, 23 for fractured arm and forearms and 36 for leg and thigh, making a total of 59 cases for fracture of these bones, or almost 50 per cent. of the total.

In view of this large percentage of suits for fracture, it seems to me not out of place to call the attention of this Society to the subject and to present for discussion at least some of the fractures that have given us great trouble. While it is undoubtedly true that fractures of the wrist and ankle have given us much cause for worry in the past, the very fact that they have become so notorious has led to a closer study with resulting great improvement in treatment.

It is my intention to discuss two other types of fractures which I believe closely second the above as a cause of trouble, namely those of the elbow and those of the knee. However, I will limit this paper to a discussion of fractures of the lower end, the humerus and femur. I will consider fractures of these bones first from an anatomical standpoint, and secondly, the manner in which the fractures are produced. The lower end of the humerus enters together with the end of the ulna and radius into the elbow, forming a true hinge joint, *i. e.*, it is capable of motion in one plain only. However, we must remember that

the axis of the humerus and radius and ulna are not in parallel lines, but that the forearm is at an obtuse angle with the arm forming the so-called "carrying angle" which is very important to preserve. The articulation, besides being supported by the ligaments, has also four great muscle groups, biceps and Brach-ant in front, triceps, behind, pronators and flexors to the inner side, extensors and supinators on the outer. These from their action may be considered in groups with certain exceptions which will be mentioned later.

While anatomically fractures of this type are classified as supracondylar, dycondylar externus and internus, condylar and epicondylar, trochlear and capitallier, practically we can consider these fractures from the manner in which they are produced, namely extension, flexion, abduction, adduction.

The extension fracture is produced by falling on the hand while the forearm is extended, some weight falling on the back of the elbow when in the same position, or by getting caught in wheels of machinery and in other similar ways. This is the most common type of fracture and constitutes between $\frac{1}{3}$ and $\frac{1}{2}$ of fractures under consideration. The fracture line is from in front, backward and upwards. The resulting deformity is caused by the drawing downward and forward of the upper fragment in front of the joint by the action of the anterior muscles aided by the lateral groups. At first glance the deformity might be mistaken for posterior dislocation of the ulna but other signs of fracture will clear this up. Hyperflexion fractures are produced by fall on flexed forearm, the line of fracture is from above, downward and backward. The displacement must naturally be the upper fragment passing downward behind the lower fragment. However, unless great violence has been exerted, triceps muscles will prevent any great overriding. In abduction fractures, the fracture line will be from below on the inner side to upwards and outward. In adduction fractures, rather the reverse is true.

In addition to these fractures, there may be produced either by direct violence, as in falling, or by indirect violence, causing the so-called tearing fracture, the fracture of the external and internal condyles and epicondyles. Of these, fracture of external condyle, by reason of more exposed position, is more common, occurring more frequently in children. It constitutes about 15 per cent. of all fractures of the lower end of the humerus. These fractures may be produced by the action of the muscles, especially those of the epicondyles. The fracture of the external epicondyle may present a condition which is easily

*Read before the Austin Flint-Cedar Valley Medical Society, Waverly, November 13, 1917.

overlooked. The supinator longus may flip the fragment completely over so that the fractured surface faces outward and no union can result. In children under sixteen, any of the causes may produce the separation of the epiphysis from the shaft. In this condition, deformity is not marked, but abnormal mobility of the elbow with soft crepitus will suggest the lesion which the x-ray picture will clear up. These constitute the typical fractures of the lower end of the humerus.

In the treatment of fractures, I think that we cannot too strongly emphasize certain points: first, getting as clear an idea as possible as to how the fracture was produced; secondly, a clear cut x-ray picture in both front and lateral views; thirdly, reduction of these fragments in as near an anatomical relation as possible, but having ever in mind that what the patient wants and what the plaintiff will insist on is a good useful arm.

In the treatment of extension fracture, the deformity must sometimes be increased, then, by traction and counter-traction, the fragments are caused to engage. Then while traction is kept up, the forearm is flexed on the arm, the hand being midway between pronation and supination. It is then held in this position by two inch adhesive strips binding the forearm to the arm, after which the two may be placed on the chest by action of the shoulder joint.

This is called the acutely flexed position which has been made popular by Jones of Liverpool, who says that if our results of fractures of the elbow are to be improved, we must recognize the value of this position. Anatomically the parts are held in contact by two natural splints, the triceps behind, and forearm in front, while the anterior and lateral groups are put in a relaxed position. Functionally the position is correct because any limitation of motion resulting will be least felt by the patient as he can perform at least his personal tasks much more satisfactorily than if the same limitations were present with the arm in an extended or right angle position. The forearm when it finally straightens out will be found with the carrying angle still present. This position may be used for all typical fractures with exception of occasionally a flexion fracture when the right angle or extended position may be required, but they should always be very clearly indicated to be used at all. These fractures occurring usually in children, passive motion can usually be started about the third week and continued until forearm can be satisfactorily extended. Typical other types of fractures are more commonly seen in adults, due to violence and frequently compound.

These may sometimes be dressed in this position when checked up by an x-ray, but may need an open operation and wiring plates or nailing, and each must be judged on its own merits.

I would again emphasize the value of acutely flexed position in these injuries.

Fracture of the lower end of the femur presents anatomically some of the same features as the elbow, but functionally they are opposite. The fracture is uncommon, probably because of the great strength of this extremity of the bone. However, they sometimes occur, and the problem must be met.

First, the fracture will involve the knee joint since that cavity extends several inches above the patella. To obtain a useful limb, the leg must be in an extended position or nearly so. If the fracture is by hyperflexion the line of fracture will be from behind downward and forward, if by hyperextension, the opposite will hold good. With the latter any tendency to displacement will be simple shortening which will be relieved by an ordinary Buck's extension. If the fracture is from behind downward and forward, an attempt to use Buck's extension will cause the gastrocnemius muscle to pull backward on the lower fragment and an extreme limitation of motion will result. It is in this type of fracture that extension by operative means finds its ideal place, and this may be done by one of several means.

First, Steimans nail; second, the ice tong clamp, Smerz clamp or the horse shoe clamp of Groves. If the fracture is compound or if the skin is abraded, making it difficult to clean, an apparatus of the ice tong principle is best; otherwise the nail extension or the horse shoe clamp held in bone with screws, gives more stability. The suitable amount of flexion can be determined in an adjustable double incline plane used, keeping always on the safe side by having the leg extended as much as possible. In a case of this kind we used ordinary wire nails which seemed to do as well as those which had a proper name. Instead of single nail fastened through the condyle, we used a nail in either side. The nail should be driven in without previously drilling a hole for it. To obtain even traction on the two sides, we used an evener made after the one used on horse-drawn vehicle, taking care that the ends were the same length. Weight can then be applied to cause traction in any direction one wishes. In connection with the using of weight, it has been the custom to have a pair of spring scales between the limb and first pulley so that one can see how much weight has been applied to the limb itself, and not how much is on the end of the cord. This gives one some additional feeling of

security and might be of considerable value in case some legal friend takes too much interest in the welfare of our patient.

No article on the subject of fractures would be complete without insisting on care necessary to prevent Volkmann's muscular contraction. We should always be sure that the blood supply to the limb as determined by the pulse taken distal to any dressing, is present and normal. Any dressing causing pain should be carefully watched to make sure that the blood supply to the muscles of the affected part is not being encroached upon as this condition is much more easily prevented than treated afterwards.

In review, I wish again to call attention to the value of acute flexion in treatment of fractures of lower humerus and to the possibilities in the extension by nail or other operative means.

THE WAR PSYCHO-NEUROSIS

The entrance of American soldiers into war activities, will bring more to our notice nervous affections that will appeal to the general public in a sympathetic or emotional way, and to the medical profession questions of diagnosis and management. We shall have the advantage of the experiences of English and French physicians and of our own neurologists who have studied psycho-neurosis in foreign fields. The British Medical Journal and the Lancet have published many illuminating articles on various aspects of war neurosis.

The February 2nd number of the Lancet contains a series of lectures before Maudsley Extension, one by Brevet Lieutenant Colonel F. W. Mott, on Soldiers' Dreams, in which is reviewed the various theories as to the nature of dreams, and reviews several cases in which were noted the depressing effects of terrifying dreams. Dr. Mott is quite certain that pathological neurosis and mental states are directly due to the shocks and strains of war. Dr. Mott and Dr. Rivers refer to a class of neuroses related to the repression of war experiences. It is stated that repression in itself is not harmful but repression under conditions which fail to adapt the individual to his environment. In times of special stress, these failures of adaptation are liable to occur and it is not difficult to see why disorders due to this lack of adaptation should be so frequent in this war. There are few, if any, aspects of life in which repression plays so prominent and so necessary a part as in the preparation for war. The training of a soldier is designated to adapt him to act calmly and methodically in the presence of

events naturally calculated to arouse disturbing emotions. His training should be such that the energy arising out of these emotions is partly damped by familiarity, partly diverted into other channels. The most important feature of the present war in its relation to the production of neurosis, is that the training in repression normally spreads over years, has had to be carried out in short spaces of time, while those thus incompletely trained, have had to face strains such as have never previously been known in the history of mankind. Small wonder that the failures of adaptation should have been so numerous and so severe.

These observations should have their influence with those who have the responsibility of meeting the condition of future modern wars. We have brave men with intelligent minds who can quickly master technical matters, but who may not for want of training, master or repress emotions in time of stress. How well the American soldier can adapt himself to the new environment and repress the powerful emotions of actual war, with its horrible settings, remains to be seen. It will be interesting to note the difference, if any, between the occurrence of war neurosis in the regular army and the national guard and the national army. At first thought it might fairly be expected that the previous training of the national guard, considering also the high character of the men, and their ready adaptability to any environment, would give that power of repressing emotions that would give the smallest number of war psycho-neuroses.

TREASURY DEPARTMENT

United States Public Health Service Washington
April 5, 1918.

The Editor,
Jour. Iowa State Med. Society.

In view of the reports in current medical literature of untoward results from the use of arsphenamine and neoarsphenamine, I have to request that you give publicity to the statement that it is requested that samples of any lots of these arsenicals which have shown undue toxicity be forwarded to the Hygienic Laboratory for examination.

In sending these samples it should be ascertained that the lot number is the same as that of the ampoules used on patients. The samples sent should, if possible, be accompanied by a brief note stating the approximate body weight and age of the patient, the dose and dilution of the drug given, the symptoms and result; that is, whether fatal or not.

Respectfully,

G. W. McCOY,
Director.

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa
T. B. THROCKMORTON, Business Manager.....Des Moines, Iowa

Publication Committee

T. B. THROCKMORTON, Secretary.....Des Moines, Iowa
W. L. BIERRING.....Des Moines, Iowa
F. W. PORTERFIELD.....Waterloo, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa
D. H. BOWEN.....Waukon, Iowa
T. E. POWERS.....Clarinda, Iowa

SUBSCRIPTION \$2.00 PER YEAR

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII May 15, 1918 No. 5

ADDITIONAL MEDICAL OFFICERS NEEDED

We published in the April number of the Journal a letter from Surgeon General Gorgas, making an urgent appeal for additional enlistments in the Medical Reserve Corps. We are now fully in the war; soldiers are being forwarded to France as fast as ocean transportation will permit, and their places will soon be taken by new draft levies. General Gorgas states that the officers in the Medical Reserve are nearly exhausted and new medical officers are sorely needed. It is not possible that American soldiers in the new calls will be short an adequate supply of medical officers when there is still a large number of doctors of military age everywhere that can and should make the necessary sacrifice. There are many cities and country towns that have not responded as well as they should in sending medical men to the army. Now is the time when medical men who have expressed a willingness to serve when they were needed, to make application for a commission in the Medical Reserve Corps. The young men who are coming forward in such numbers in the selective service, need and must have adequate medical attention, and the physically able doctors should not turn aside from any motive of their own; such conduct is not in accordance with the best traditions of the profession and we sincerely hope that the medical profession will live up to the highest ideals. It may be true that our country has not adequately recognized the medical profession in the way of honors and rewards, but it is no time to measure such things now; let us

do that in the future when we have proved our worth and shown the full measure of patriotism and spirit of helpfulness.

MEDICAL RESERVE CORPS

The response of the medical profession to the call for enlistment in the reserve corps has been very gratifying, more so than we at one time feared. For a time the outlook was not bright, and there was a feeling in many directions that a selective draft of medical men would be necessary, but so far enlistments have been sufficient. Many more medical officers will be needed for the selected men who will probably be called in the near future. We are informed that the Surgeon General is anxious to have as many physicians apply for commissions as possible to meet the exigencies which may be near at hand, due to the anticipated call, and as we become more engaged at the front. It would be unfortunate in the extreme if the medical contingent when needed was lacking. It is urged that doctors of proper age and fitness apply for Medical Reserve commissions and arrange their affairs for quick mobilization when necessary. It is not intended that they shall close their offices at once, but be ready when the call comes.

FUTURE MILITARY SERVICE

In a previous number of the Journal, we called attention to the provisions of the Owen-Dyer Bill for the purpose of increasing the efficiency of the medical service of the Army. It should be well known that the efficiency of medical services is not materially affected by the amount of the fee or the question of compensation but by a recognition of the honorableness and the value of the service. There are to be sure, medical men whose standards are money standards, but these men would not be influenced by rank, which would not likely reach them, as the money compensation would probably be greater in private practice; we need not consider them. We are referring only to the real men who are willing to serve their country in an honorable way with fair recognition as to rank, such as is granted by other nations great and small. No time may be spent in discussing the value of medical supervision in military camps; this is fully recognized; but the psychology which persists in maintaining low rank for the chiefs of medical staffs would be incomprehensible if it were not for the fact that we are familiar with the psychology which gov-

erns corporations of one kind and another in the treatment of their chief surgeons, division surgeons, and medical directors. The legal service of the same grade is paid from five to ten times as much in money and in recognition and favors. Medical men in high rank in corporations rarely complain because they are not paid more money, but are resentful of the subordination they are subject to.

We, however, should not sulk and refuse service because we are not treated better, but should join in securing better things. Some will say it does not matter whether the medical service secures better rank or not as it cannot affect us. This is the short-sighted logic which has so long been the curse of the medical profession. If the government recognizes commensurate rank for its medical officers, the corporations and organizations which we serve will recognize higher merits in us. Our interests are the same and we should stand unitedly to show how much the public will gain in stimulating the best that is in us in all public service. It is well known that it is contrary to military ethics for any service to press the questions of rank or compensation on Congress, but the profession in civil life are not restrained by ethical consideration, and every medical practitioner should in the interest of the dignity and character of the profession, use his legitimate influence with his Congressman in bringing about the passage of the Owen-Dyer bill.

There is another very important matter which should engage the attention of the medical profession at this time, and that is the passage of a law establishing universal military training. There is a period in life, say about the age of twenty, when every able bodied young man can give a year of intensive training in a military camp. If we leave out of consideration the immense value of discipline, which our American young men need, there are the physical benefits which we understand better than any other class of citizens. I am sure that many medical practitioners have felt a degree of alarm on studying the physical condition of our young men who have come up for examination. When we find from 10 to 15 per cent. of a select class of young men, the per cent. differing in country towns and in large cities, unfit for corporation service and from 20 to 30 per cent. unselected, as in the draft, unfit for military service, we begin to feel that the American young man is at least far from being a perfect specimen of manhood.

More than this, if the public could witness the almost total disregard for body cleanliness and of underclothing, they would wonder what is to become of our young men and older men for that matter.

We have examined many for industrial service who have had a period of service in the army or navy and have been astonished at the difference even when comparing practically the same class, one having military training and the other not having military service.

Assuming there was no military necessity for trained soldiers, assuming that we are quite satisfied to be like the Russians, satisfied to be a subject race and pay tribute to a stronger people who admire our many working qualities but hold us in contempt as men of strength and character, yet we must keep up the physical strength of our young men for industrial purposes if not for the purpose of defending our national dignity and character. It may be said that we are doing very well, that our college athletes are equal to those of any other people. This is all very true. It shows what American boys can do when trained, but unfortunately this training includes but a small per cent. of our young men. If this small class of physically trained can and are willing to bear the burden of national defense, and can safeguard our national character and dignity, well and good, but what will be the ultimate effect? Will it not tend to develop a gentleman and ruling class and a subject and peasant class? We have reason to believe that this would be contrary to the traditions of our people.

Since, then our present methods of physical training effect only a limited class of young men, some provision must be made for the great mass of young men that there is no provision for. The enforced military training of young men at the age of twenty, would serve three purposes; first, give young men a physical training they are greatly in need of; second, a disciplinary training equally urgent; and third, a military body ready at all times to give our decisions force and to protect us against encroachments we have recently come to recognize, but only our wise men foresaw. Military training of college students is good as far as it goes, but is utterly insufficient. A national guard or national army encamping for one or two weeks each year is of some account, but only after a year of continuous intensive training with encampments for one or two weeks each year, will give an efficient army for service under the conditions we firmly believe will continue to exist after this war is over.

DISQUALIFYING MENTAL AND NERVOUS CONDITIONS

It is the experience of surgeons at the front that mentally defective and neurasthenic soldiers are worse than useless; they are unreliable and are unsafe, increase the risk to others by failing at the crucial moment, are subject to shell-shock hysteria, and neurasthenia, and soon have to be sent home without rendering service, and at a great expense to the country. The expense of sending a soldier to France and returning him is about \$2,000 per man. It will be at once apparent that selected men should be carefully scrutinized for evidences of mental and nervous defects. There is also a proportionate useless expense of sending such men to the cantonments. To keep well within Class I-A, there may be a tendency to send a poor quality of men so far as the nervous system is concerned, and remain within the standards of physical requirements. The Canadian Medical Board found that 25 per cent. of returned men were suffering from gunshot wounds of all kinds, and 12 per cent. from mental and nervous diseases.

The strain of modern battles requires a stable nervous system and at best many men will fall victims of nervous disorders. Every provision is made for soldiers suffering from nervous and mental diseases, both as to hospitals and equipment and care at the hands of skilled neurologists. In guarding against a bad selection, great difficulties will arise. It is extremely difficult to measure the resistance of a given nervous system and it is really a question if a specialist in diseases of the nervous system will make less mistakes than the trained general practitioner of wide experience with men and with disease, but it should be remembered that it is less dangerous to pass a leaking compensated heart than a leaking nervous system.

MANY SURGEONS DROPPED FROM THE ARMY

Washington despatches dated February 26th state that in line with its reorganization on a greater efficiency basis, the Surgeon General of the Army has released from service 1,050 medical officers. The discharges are classified as follows: Physical disability, 411; inaptitude for the service, 154; to join other branches of service, 306; domestic difficulties, 59; resignation, 88; needed by communities, hospitals, schools, etc., 32; total 1,050. During the same period there have been 2,265 promotions of medical reserve officers, including some officers promoted

more than once. The discharges are in addition to about 4,000 rejections of applicants, 21,740 having been accepted and recommended to the Adjutant General's office for commissions, and of these 13,687 were on active duty on February 23rd. The Surgeon General is determined to put the Medical Department on the highest plane possible by elimination of all who are unfit for actual service.—(New York Medical Journal.)

But few cases have been found where serious consequences have followed unfitness on the part of the surgeon, and they have been severely dealt with by court martial. On a previous occasion we have emphasized the fact that it was not the unsuccessful and drifting doctor the government wanted, but the man who had proved his ability by successful practice, who should offer his services. The Surgeon General is determined that the new army shall be provided with the most skillful medical and surgical service the country affords, and to this end, men of established practice should enlist at whatever sacrifice. Of course the young graduate who has served a hospital internship, should go first, and then the doctor whose family is well provided for. It is not strange that in calling out a great number of doctors on short notice, many should present themselves unfit for high grade service. There are a considerable number of doctors who could meet the demands of certain indiscriminating communities, who could not meet the requirements of a military service under the eye of a critical inspection.—Editor.

THE TEST OF FITNESS OF THE IRRITABLE HEART OF SOLDIERS

The studies of Dr. Thomas Lewis at the Military Heart Hospital, Colchester, are of so much interest and importance that we have followed his work with much care. The efficiency of an irritable or leaking heart cannot safely be determined by any means ordinarily employed. The conditions of civil life, even with the fullest history, are not entirely sufficient for military purposes; the conditions are so different. Dr. Lewis suggests and urges that the test shall be a regulated exercise under the direction of a trained physician. He says: "It is strongly advocated that every general military hospital should have at its disposal a training ground upon which its patients may be submitted to physical exercises under the supervision of the medical officers who treat them and sort them." Dr. Lewis further states: "No patient in regard to whose physical capacity there is a doubt, should

be discharged from hospital (as fit or unfit) until his tolerance or intolerance of physical strain has been established."

These observations show that a full physical examination of a questionable heart by an expert physician cannot be relied on to determine how far the affected heart will carry the man. The mental and physical strain of war will no doubt disturb the heart of many soldiers and if all are invalided home who have heart disturbances, there will be serious losses in the military forces. This has been felt in England, and a number of the most expert heart men have been engaged in studying the problem with the view of justice both to government and to the individual soldier, with the prospect of giving us a fuller knowledge of heart efficiency under varying circumstances.

Dr. W. F. Braasch of the Mayo Clinic in a paper read before the New England branch of the American Urological Association, published in the Boston Medical and Surgical Journal for February 28, 1918, draws attention to certain statistical studies on Lithiasis. From January 1, 1910, during a period of seven years, sixty-two patients were operated on for bilateral nephrolithiasis. During the same time, 504 patients were operated on with unilateral lithiasis, making a percentage of 12.3.

Considering the bilateral cases, 62 in number, pain was localized definitely on both sides in 14 cases, to one side in 26 cases, and in 14 cases, to one side recently, with a previous history of more or less definite pain on the other side. Renal pain was absent in eight cases.

The lesson to be drawn from these observations is that in all cases, complete roentgenographic exposure of both kidneys and ureters should be made.

Dr. Braasch calls attention to the estimation of renal function in determining the prognosis, and recommends the phenolsulphonephthalein test as valuable as any. A high return before operation indicates the greater efficiency of the kidneys which may be expected to increase in most cases at varying periods after operation. Attention is also called to radiographic data and cystoscopic inspection as determining certain points in relation to what shall be done with the kidney at the time of operation. There were thirty-three patients not operated on because of low efficiency of the kidneys revealed by the foregoing tests. Of the 62 cases in 33 patients both kidneys were operated, and in 29 cases only one kidney, for reasons set forth in the paper. In 22 patients, nephrectomy of one kidney was found advisable. There were no operative

deaths, but 10 died within a year from kidney insufficiency.

In the offer which is being made by the medical profession of their services to the government, a certain number have applied for enlistment in the Medical Reserve Corps and have been declined on account of age or physical disability. These men are as much entitled to mention as those who have been fortunate enough to receive commissions. We have no way of knowing who has been rejected on account of age or other disability. We would like to make up a list of the men who have offered their services and we would be very grateful if such doctors would send us their names; that is, the names of those who have made application to the Medical Reserve Corps and been refused on account of age or physical disability.

THE SUPREME COURT DECISION ON THE CORPORATE RIGHTS OF THE AMERICAN MEDICAL ASSOCIATION

In 1910 the state's attorney of Cook county (Chicago) was petitioned to institute "quo warranto" proceedings against the American Medical Association on the grounds that the association's affairs were being conducted illegally in that its officers were elected at annual sessions held outside of the State of Illinois. The state's attorney refused to take action in the matter, and later, the attorney general of the state, who was appealed to, also refused to act. January 5, 1911, mandamus proceedings were begun in the Circuit Court of Cook county, Illinois, to compel the state's attorney to initiate the quo warranto action which he had declined to institute. Until December 20, 1915, the issue was between the parties asking for the "mandamus" and the state's attorney of Cook county, Illinois; the point at issue being the technical one as to whether the state's attorney was compelled to act or had discretionary authority in the matter. The case went through the lower courts and finally was carried to the Supreme Court of Illinois, which in December, 1915, refused to hear arguments on the merits of the cause as it related to the American Medical Association, but ordered the Circuit Court to take up the original quo warranto proceedings designed to raise the question of whether or not Illinois corporations "not for profit" are compelled to hold their elections and conduct their business within the confines of the state. Up to this point the American Medical Association was not technically interested in the controversy; now, how-

ever, it became a party in the action. Quo warranto proceedings against the members of the board of trustees were instituted in the Circuit Court of Cook county, Illinois, which after trial rendered a decision favorable to the association. The case was then carried to the Appellate Court of Illinois, which confirmed the decision of the Circuit Court. An appeal was finally made to the Supreme Court of Illinois, which last week (April 16) rendered its decision, settling the question. This decision is entirely satisfactory so far as the association is concerned. One paragraph of the opinion reads:

It seems reasonably to follow that if a corporation not organized for pecuniary profit may hold meetings at stated times outside of the State of Illinois, composed of delegates selected by the constituent associations, for the transaction of business of the corporation, it is not unlawful to authorize and provide for the election by said house of delegates of trustees of the corporation. The American Medical Association was organized solely for the purpose of the advancement of medical science. Its purpose was to improve methods for the treatment and prevention of diseases of the human race. Its usefulness for these purposes would be seriously interfered with, if not absolutely destroyed, if it could not provide for the election of trustees from the most efficient men in the association throughout the United States, by delegates selected by the constituent associations from the various states in the Union. Such authority to the House of Delegates is conferred by the by-laws and is not in conflict with or prohibited by the constitution or laws of Illinois relating to corporations not for pecuniary profit.

The decision is important not only to the American Medical Association, but also to all organizations incorporated under the law of Illinois—in fact of any state—governing corporations “not for profit.”

MEMORANDUM TO DIVISION SURGEONS

1. Attention of medical officers is directed to the provisions of paragraph 423, M. M. D. “Medical officers will not publish professional papers requiring reference to official records or to experience gained in the discharge of their duties without the previous authority of the Surgeon General.”

2. Numerous scientific papers written by officers of the medical department have recently appeared in the medical press without specific authority from this office. This practice will be discontinued, and the above regulation will be strictly complied with.

3. Officers desiring publication of professional papers will submit two copies to the Surgeon General with request for permission to publish same. Upon approval, a copy will be forwarded to the

Journal designated by the officer for publication.
By direction of the Surgeon General,

C. L. FURBUSH,
Lieutenant Colonel,
Medical Corps, N. A.
April 15, 1918.

IOWA MEDICAL MEN IN THE WAR

To Camp Dix, Wrightstown, N. J., for duty, from Camp Upton, Lieuts. Harold L. Brereton, Emmetsburg; William Harris, Moravia.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Dodge, Lieuts. Leo. C. Kuhn, Chariton; Lee W. Prescott, Sloan.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. Walter E. Foley, Davenport.

To Camp Meade, Annapolis Junction, Md., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. Meredith Mallory, Des Moines.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. Roswell H. Payne, Des Moines.

To Camp Travis, Fort Sam Houston, Tex., for duty, Capt. Emil O. Ficke, Davenport.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. Rex V. Henry, Hedrick.

To Fort Oglethorpe for instruction, Capt. Nathaniel Palmquist, Hornick.

To Fort Riley for instruction, Lieuts. Thomas N. Walsh, Hawkeye; Joseph Wm. Belisle Flagolie, Sioux City.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion to his proper station, from Fort Riley, Lieut. George Maresh, Riverside.

To Army Medical School for instruction, Lieuts. John H. McCall, Allerton; Harry F. Kiesling, Dayton; Thomas B. Herrick, Manson; Eugene H. McCaffrey, Maquoketa; Oscar H. Banton, Nora Springs; Charles T. Farlow, Yetter.

To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. Charles D. Busby, Brooklyn; from Camp Shelby, Lieut. Percy B. Battey, Indianapolis.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. Harry F. Rubel, Struble.

To Camp Upton, Long Island, N. Y., for duty, from Fort Riley, Lieut. Walter F. Schmaltz, Mount Airy.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp Dodge, Des Moines, Iowa, base hospital, Capt. William M. Trotter, Maxwell.

To Fort Riley, base hospital, Lieut. Seward White, Olin; for duty, from Fort Riley, Lieut. Rex V. Henry, Hedrick; for instruction, Lieut. Arthur M. Washburn, Burlington; from Camp Dodge, Lieut. Adam H. Konigmacher, Missouri Valley.

To Pittsburgh, Pa., for instruction, and on completion to Camp Hancock, Augusta, Ga., base hospital, from Fort Riley, Capt. William L. Hearst, Cedar Falls.

To Rochester, Minn., for instruction, and on completion to Camp Grant, Rockford, Ill., base hospital, from Fort Riley, Lieut. Alvin H. Handrickson, Sioux City.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to Camp Sevier, Greenville, S. C., Capt. James R. Brady, Sioux City.

To Washington, D. C., for duty, from Camp Lee, Major Edwin A. Merritt, Council Bluffs.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. Paul Nicoli, Des Moines.

To Camp Bowie, Fort Worth, Texas, base hospital, Capt. Walter H. Fox, Waucoma; Lieuts. Clairemont H. Mitchell, Leon; Frank A. Preissman, Mechanicsville,

To Camp Custer, Battle Creek, Mich., base hospital, from Boston, Capt. Edward S. Parker, Ida Grove; from Fort Riley, Lieut. Edmund W. Wilson, Rolfe.

To Camp Dix, Wrightstown, N. J., as a member of a board for the special examination of the command for tuberculosis from Fort Oglethorpe, Lieuts. Harry R. Jenkinson, Iowa City; Henry I. McPherri, Perry.

To Camp Dodge, Des Moines, Iowa, for duty, from Fort Riley, Lieut. Lee W. Prescott, Sloan.

To Camp Grant, Rockford, Ill., for duty, from Camp Grant, Capt. James J. Daly, Decorah.

To Camp Lee, Petersburg, Va., base hospital, from Chicago, Capt. Evarts A. Graham, Mason City; base hospital, Lieut. Arthur C. Brown, Council Bluffs.

To Camp Logan, Houston, Texas, to examine the command for mental and nervous diseases, from Camp Beauregard, Lieut. Fisher B. E. Miller, Cherokee.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. Edgar A. Stewart, Salem.

To Fort McHenry, Md., for temporary duty, from St. Louis, Capt. Robert J. Lynch, Des Moines.

To Fort Oglethorpe for instruction, from Camp Dodge, Lieut. Adam H. Konigmacher, Missouri Valley; from Chicago, Lieut. Ray R. Kulp, Davenport.

To Fort Riley for instruction, Capt. Howard J. Wright, Des Moines; Charles W. Lyon, Marne; Guy Seward, Neola; Charles L. Patterson, West Side; Lieuts. Frank P. Riggle, Cedar Rapids; Joseph W. Sellards, Clarinda; Henry A. Cobb, Council Bluffs; George S. Yates, Des Moines; Edward H. White, Dubuque; Alexander P. Stewart, Inwood; Albert J. Charlton, Lowden; Chetwynd M. Franchere, Mason City; Armand Naffziger, Merrill; Howard M. Williamson, Olin; Frederick M. Hahn, Webster City; from Fort Des Moines, John J. Bowes, Livermore.

To Hoboken, N. J., for duty, from Camp Bowie,

Capt. Prentiss N. Cleaves, Cherokee.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieuts. Merl L. Pindell, Macksburg; Jacob J. Sybenga, Pella.

Honorably discharged on account of physical disability incident to the service, Capt. George I. Lythcott, Des Moines; on account of physical disability, existing prior to entrance into the service, Capt. Louis B. Carson, Maquoketa.

Resignations of Lieuts. Harry C. Nichols, Carson, and Charles E. Kellogg, Shenandoah, accepted.

To Army Medical School for instruction, Lieut. Elliott C. Cobb, Sioux City.

To Camp Cody, Deming, N. M. for duty from Camp Cody, Lieut. George J. Wenzlick, Iowa City.

To Camp MacArthur, Waco, Texas, base hospital, Capt. Thomas M. Heard, Sioux City.

To Camp Travis, Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. Milton D. Jewell, Decorah.

To Camp Upton, Long Island, N. Y., for duty, from Camp Upton, Lieut. William Harris, Moravia.

To Chicago, Ill., Northwestern Dental School, for instruction, Capt. Calvin W. Harned, Des Moines.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. Arthur Druet, Larchwood.

To Fort Clark, Texas, for duty, from Fort Riley, Lieut. Abraham G. Fleischman, Des Moines.

To Fort Riley for instruction, Capt. Albin B. Phillips, Clear Lake; Grant Augustine, Minden; Lieuts. George F. Puffett, Ames; Don Hamilton Newland, Belle Plaine; Dan L. Mahoney, Dubuque; Kinsley Renshaw, McGregor; Louis E. Eslick, Rockwell City; for duty, from Fort Riley, Lieut. Harry E. Jones, North English.

To Newport News, Va., for temporary duty, from Fort Riley, Lieut. Edwin E. Wuttke, Sumner.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Dodge, Des Moines, Ia., base hospital, Capt. Jefferson D. Blything, Bettendorf.

To Waco, Texas, Signal Corps Aviation Camp, from Fort Riley, Lieut. Leoman D. Huff, Lenox.

Honorably discharged, Lieuts. Frank L. Griffin, Baldwin; William E. Brown, Cedar Rapids.

To Camp Dodge, Des Moines, Ia., as captain in the Medical Reserve Corps, from duty as captain in the National Army, Capt. John R. Gardner, Lisbon.

To Camp Grant, Rockford, Ill., to examine the command for mental and nervous diseases, from Fort Ontario, Capt. Richard G. Eaton, Cherokee.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Pike, Major James W. Thornton, Ackley.

To Camp Travis, Fort Sam Houston, Tex., base hospital, from Fort Riley, Lieut. Ira D. Kelsheimer, Paxton.

To Fort Oglethorpe for instruction, Lieut. George H. Steele, Belmont; from Chicago, Capt. Calvin W. Harned, Des Moines; Lieut. George R. Narrley, Keokuk.

To Fort Riley for instruction, Capt. Charles F.

Smith, Des Moines; Lieuts. Donald Enfield, Clarinda; Sidney B. Bellinger, Council Bluffs; Roy C. Jackson, Independence State Hospital; Thomas A. King, West Union, base hospital, from Fort Riley, Lieut. Charles D. Shelton, Bloomfield.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. William M. Hubbard, Rembrandt.

Captain Harold S. Spilman, formerly acting senior surgeon of the 19th Field Artillery at Camp Stanley, Texas, has been promoted to the rank of major and is now in Washington, D. C.

Captain Thomas Burcham has been promoted to the rank of major, and assigned to Dr. Blake's Hospital in Paris, in charge of x-ray work.

To Chicago Presbyterian Hospital, for instruction, and on completion to base hospital, Camp Cody, Lieut. Gus B. Young, Des Moines.

To Army Medical School, Washington, D. C., for instruction, Lieut. Frank A. Will, Des Moines.

Lieut. Corwin S. Cornell, of Knoxville, has been in training at an officers school of the Royal Medical Corps, Blackpool, England.

Lieut. T. N. Walsh, of Hawkeye, has been ordered to Fort Riley.

Lieut. Ward Hannah, Webster City, has been ordered to Fort Riley.

Lieut. Ben T. Whitaker, of Boone, has been ordered from Fort Riley to Bellevue Hospital, for training.

BOOK REVIEWS

AMERICAN ADDRESSES ON WAR SURGERY

By Sir Berkeley Moynihan, C. B., Temporary Colonel A. M. S., Consulting Surgeon, Northern Command, 12 mo. of 143 Pages. W. B. Saunders Company, 1917. Cloth, \$1.75.

This is one of the most interesting and instructive books we have chanced to read. Those of the profession who had the pleasure of meeting Sir Berkeley in Chicago during the session of the Clinical Congress, were charmed with his personality and instructed by his addresses. W. B. Saunders has published these addresses in an attractive form at a moderate price. These addresses may be read over time and again without losing interest.

The address on "The Causes of the War" is a fair and judicial presentation of the case, remarkably free from prejudice and carrying conviction to every reader.

The second address is "Gunshot Wounds and Their Treatment." In this address Sir Berkeley presents a scientific resume of the more recent and accepted methods of treatment of wounds at different periods and attempts to explain some discrepancies which have apparently crept in by the advocates of the different methods. He points out the disappointments following the methods which had been thought sufficient in the early days of the war, and congratulates the profession on the rapidity with

which they adjusted themselves to the new conditions. Sir Berkeley is distinguished for the direct way he has of stating facts and opinions. He gives the Carrel-Dakin method credit for an ingenious technic, but for himself he leans strongly to the principles advocated by Wright. Other methods are presented, including his own. Sir Berkeley concludes his address by presenting the principles which in the present state of knowledge should be observed.

The paper on "Wounds of the Knee Joint" is of great value and presents one of the most important subjects in war surgery, both as to the saving of life and limb. So much of wisdom and surgical skill is offered that we cannot do better than advise both military and civil surgeons to read this address with great care.

The importance of saving and repairing damaged nerves in relation to functional use of limbs is so great that the author has gathered from various sources the experience of surgeons in the treatment of Peripheral Nerve Injuries, and is a valuable contribution.

The last and most impressive address is "Gunshot Wounds of Lungs and Pleura." Wounds of this character have been so long regarded in large measure beyond the reach of surgery that Moynihan's address on this subject was a revelation to the body of distinguished surgeons who constituted the large audience on this occasion. The opening of the chest, delivering the lung outside the chest walls, searching the lung with the thumb and fingers for the bullet or shell fragment, and removing it with safety to the patient, seemed almost marvelous, creating an impression not easily forgotten. We almost feel that this edition of Sir Berkeley Moynihan will be quickly exhausted.

THE SURGICAL CLINICS OF CHICAGO

W. B. Saunders Company, Philadelphia and London, December Number. Price Six Numbers Per Year, \$10.00.

This is the concluding number of Volume One, Chicago Surgical Clinics, constituting a volume of 1350 pages, with many illustrations. This enterprise was started under the name of The Murphy Clinics, made up almost entirely by Dr. Murphy's Clinics at Mercy Hospital. Since Dr. Murphy's death, the work has been greatly extended, including nearly all the great clinics in Chicago. While missing the personality of the great surgeon who has recently passed away, we believe the present publication has a greater value than the first series in that it presents the work of a greater number of men who stand in the first ranks of surgeons.

We find a difficulty in selecting any particular clinic to call attention to. Dr. Dean Lewis presents an interesting and unusual case of ossifying myositis developing in a clean incised abdominal wound "in which there was no noteworthy reaction during the process of repair." Dr. Lewis says: "I shall

not remove the bone," trusting no doubt to the chances of absorption.

Dr. Eisendrath presents some splints and clamps used by Groves in extension in fractures. We allow ourselves the privilege in this connection to recommend to every surgeon who treats fractures, to consult the most admirable work on fractures prepared by Dr. Hey Groves of London, England, published by The Macmillan Co., Canada, Ltd.

**A PRACTICAL TEXT-BOOK OF INFECTION,
IMMUNITY AND SPECIFIC THERAPY,
WITH SPECIAL REFERENCE TO IM-
MUNOLOGIC TECHNIC**

By John A. Kolmer, M.D., Dr. P. H.: M. Sc., Assistant Professor of Experimental Pathology, University of Pennsylvania, with an Introduction by Allen J. Smith, M.D., Professor of Pathology, University of Pennsylvania. Second Edition, Thoroughly Revised. Octavo of 978 Pages, with 147 Original Illustrations, 46 in Colors. W. B. Saunders Company, 1917. Cloth, \$7.00 Net; Half Morocco, \$8.50.

It was many years before the true significance of the work of Jenner with his bovine vaccine for small-pox could be appreciated; not until the long series of investigations and discoveries by Pasteur had shown the true position of medicine. Under the inspiration of Pasteur, a great number of workers entered the field of investigation that led us from drug cure of disease to the prevention of disease by vaccines and antitoxines to procure immunity to disease. Our greatest hope lies in this direction. It is an exceedingly difficult subject and greatly complicated, and many disappointments must necessarily follow, but by diligent study, thought and experimentation, one difficulty after another has been overcome. No one doubts today that immunology will solve the difficulties in combatting disease in the future. With this in view, Professor Kolmer has devoted twenty years of study, the results of which he lays before us in his new edition on Immunology.

In part first the author presents the apparatus necessary and the methods used in obtaining human and animal blood and the technic of animal inoculation and animal immunization. To make the procedure clear, numerous illustrations are employed.

Part second treats of infection, sources of infection, mechanism of infection, susceptibility to infection, defensive mechanisms; production of disease, toxins, endotoxins aggressins, bacterial proteins, etc.

Part third—Theories of Immunity, types of immunity; Phagocytosis, chemotaxes, endolysins; The Relation of the Body-Fluids to Phagocytoses, etc.; Opsonion, opsonic index, etc.; Bacterial Vaccines, frequency and dosage of inoculation; Antitoxines, production of antitoxin for therapeutic purposes, serums, etc.; Ferments and Antiferments; ferment reactions; Sero-Enzymes in Disease; Agglutins, agglutination reaction, technic; Precipitins, practical

applications, different tests, technic, detection of meat adulterations, preparation of immune serum, technic; Cytolysins, amboceptors, complements; Bacteriolysins, culture, technic, bacteriolytic serums in the treatment of disease.

Two chapters are devoted to hemolysins and venom hemolysis, and three chapters to the exceedingly complicated subject of Complement Fixation.

Considerable space is given to Anaphylaxis. The bearings and relationship of this subject are difficult to determine at this time, but that it will have an important influence on the future of medicine is generally accepted. The student will find in this section of the book, helpful information.

The remaining chapters, including 236 pages, are devoted to the consideration of vaccines in the prophylaxis of disease, the technic employed; the care and the precautions to be observed; the relative value of autogenous and stock vaccines; the consideration of vaccines in well known and accepted forms of disease, as small-pox, diphtheria, as an immunizing influence, and in many other not so well established types, but where vaccines are used more or less extensively. Autoserum therapy, salvarsan and neosalvarsan in syphilis, the methods of treatment, are carefully considered, the technic, the importance of laboratory equipment and experience and training on the part of the physician. The author states that "It is too soon to judge of the ultimate value of salvarsan in the treatment of syphilis." Personally we have no doubt of the great value of salvarsan treatment, but we must insist that its administration should be in the hands of specially trained men with adequate laboratory facilities. At the present time the difficulty is greatly increased by the uncertainty of the agent on the market. At the best it is the author's opinion that the best results are obtained only by a suitable combination of expert clinical knowledge and training in serologic technic.

**MEDICAL WAR MANUAL NO. 3, MILITARY
OPHTHALMIC SURGERY**

By Allen Greenwood, M.D., Major R.C., U. S. A. and G. E. de Schweinitz, M.D., Major, M. R. C., U. S. A. Lea & Febiger, Philadelphia and New York.

This manual, authorized by the Secretary of War, and under the supervision of the Surgeon General, and the Council for National Defense, is the third of this series, put out in a form convenient and compact, supplying a need, and conforming to the requisite of economy of space so essential to the military surgeon, with his frequent change of station and limited allowance of baggage.

Theoretical desiderata are here subordinated to a practical presentation of the surgical conditions encountered in the field, with plain terse indications and directions which have stood the test under actual daily use.

The subject of wounds is divided into contusions,

(Continued on Advertising Page xvi)



Surgical Catgut Ligatures *Thoroughly Sterile*

Sterilization is accomplished at opportune stages in the process and after the sutures are sealed in glass. The surgeon may, if he desires, boil these tubes with his instruments.

The Armour method of handling catgut insures a strong, supple ligature that will not twist. Plain and Chromic; sizes, 000, 00, 0, 1, 2, 3, 4, 5 and 6.

We recommend 000 and 00 sutures instead of silk worm and horsehair as their removal is not necessary.

Specify Armour's and avoid the annoyance of broken sutures.

ARMOUR AND COMPANY
CHICAGO

1405

Wherever There's Pain and Inflammation— There Summon **ATOPHAN**

Antiphlogistic of strikingly prompt and enduring effect, non-depressant and safe, which may need recalling to your attention.

Whether the pain be thought vaguely "*Rheumatic*," "*Neuralgic*," or distinctly that of *Neuritis*, *Migraine*, *Hemicrania*, *Lumbago* or *Sciatica*, let the inflammatory process be *Iritis*, *Laryngitis* with *Dysphagia*, or the burning and itching of *Eczema*, *Pruritus*, etc., Atophan is indicated for relief and treatment.

Information and Literature from

SCHERING & GLATZ, Inc., 150 Maiden Lane, NEW YORK

Although Atophan—formerly imported, but now manufactured in the U. S. A.—was practically unobtainable for nearly two years, few physicians will have forgotten its unique physiologic action and therapeutic efficacy in *Gout* and *Articular Rheumatism*.

It is the broader application of Atophan as a *Systemic Analgesic* and

(Continued from Page 196)

penetrating and perforating wounds of the eye, traumatic cataract, penetrating wounds of the orbit, and wounds of the eyelids. Mention is made of eye shields to prevent wounds of the eye, such devices having been tried in the French Army with good effects.

Eye conditions, expressing signs of disease or injury elsewhere than in the eye, are considered, also psycho-neuroses, from shell shock, etc.

A plea is entered for the use of men especially well fitted for high grade work in special hospitals, with specially trained nurses, and special equipment, to produce the best results in the way of reconstruction, which is to play so large a part, and which should be commenced at the earliest possible moment.

The section on Trachoma by Dr. de Schweinitz is of great importance, both because many men of the draft army come from regions where trachoma is present, and because our men may be expected to come into contact with this disease during foreign service. Past records prove it to be a great menace to armies, and a careful study of the subject by military ophthalmologists is essential. This section also covers other forms of ocular inflammations fully, and is a comprehensive survey of those conditions constantly encountered in the service.

The last chapter by Dr. Parker on Malingering, is timely, showing how those who endeavor to avoid service by misrepresentation as to their vision, may be detected.

The book is very fully illustrated, especially considering its size, and by reason of these plates, will be of great value not alone to the specialist, but to the regimental surgeon as well, who is the first to see these wounds and diseases, and who should be fully informed that he may not delay the proper treatment.

Lieut. H. R. Reynolds.

MEDICAL WAR MANUAL NO. 2, NOTES FOR ARMY MEDICAL OFFICERS

By Lieut. Col. T. H. Goodwin, R. A. M. C.,
with an Introduction by Surgeon General
William C. Gorgas, U. S. A. Lea & Febiger,
Philadelphia and New York.

During the visit of Col. Goodwin to the United States in the fall of 1917, he found time, besides inspecting many army camps, to give a series of lectures at the Army Medical School at Washington, D. C., from which was elaborated the present volume. Beginning with a statement of the organization of the British Army and the distribution of the medical officers with its different units, their duties and responsibilities, the relation of the medical service to the rest of the army, the supply service or Army Service Corps and the medical and surgical equipment, he follows with a discussion of the wastage of war and battle casualties. Charts show the points of resemblance to, and of difference from our own army medical service. Discussion of the

following points is then taken up; Duties of the Medical Officer in Charge of a Battalion Before and During Engagement; the Regimental Aid Posts, with Plan of Same; Field Ambulance; Motor Ambulance Convoys; Casualty Clearing Station; Stationary and General Hospitals.

The chapter on War Surgery mentions the failure to prevent sepsis, as a great disappointment, probably caused by the extremely polluted soil of the battle area, and the high percentage of shell wounds, with destructive action on the vitality of the tissues therefrom.

In speaking of collapse and shock, antiseptics, etc., Col. Goodwin states that he limits himself to modifications and lessons learned during the present war.

Gas Gangrene, Tetanus, Wounds of the Large Blood Vessels, the Carrel-Dakin Treatment, Fractures, with illustrations of the various types of splints found to be of most service, Wounds of Joints; Head, Spinal, Chest, and Abdominal Injuries are treated successively with discussion of Trench Foot, and Gas Poisoning, closing this section.

Under Sanitation in War, is an outline of the personnel of the R. A. M. C. engaged in this work, with descriptions of the sanitary appliances used in this work, with numerous cuts, both subject-matter and drawings being from Delian's work.

A short appendix gives Notes for Service on the Western Front, as regards clothing, billeting, messing, social customs, censorship regulations, and hints, a very pithy paragraph of advice.

The Modern Hospital Publishing Company has purchased the Proctologist and Gastroenterologist, and in the future it will be published as a department of the Interstate Medical Journal, with Dr. Anthony Bassler of New York as department editor.

During February the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

The Abbott Laboratories:

Chlorcosane.

Barbital-Abbott.

Procaine-Abbott.

Dermatological Research Laboratories, Philadelphia Polylinic:

Arsenobenzol (Dermatological Research Laboratories) $\frac{1}{2}$ gm. Ampules.

Eli Lilly and Company:

Typhoid Vaccine, Prophylactic.

Typhoid Vaccine, Therapeutic.

Typhoid Mixed Vaccine, Lilly.

Merck and Company:

Mercury Benzoate-Merck.

Monsanto Chemical Works:

Halazone-Monsanto.

H. K. Mulford Company:

Bulgarian Bacillus, Friable Tablets.

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, JUNE 15, 1918

No. 6

ADDRESS OF PRESIDENT*

JOHN NELSON WARREN, M.D., F.A.C.S.,
Sioux City

MEMBERS OF THE IOWA STATE MEDICAL SOCIETY:

It was very gracious in you to choose me as your president, an honor I wish to duly acknowledge. The assistance I have had from the other officers of the Society has been very courteous and valuable. In fact, whatever success this meeting may attain is largely due to our very efficient secretary and the wise council of our treasurer. The chairmen of the different sections have been active in their assistance to the committee on scientific work* (See last paragraph.)

There must be a demand to incite one to adopt a given vocation. In 1915 the population of Iowa was 2,221,038. It is estimated that two per cent. of the population are constantly sick. This would place 44,420 continually on the sick list in this commonwealth. Estimating the duration of illness for each case to be two weeks, the number of cases of illness would be 1,154,939. It does not mean that this number of individuals will at some time during the year be sick, as the same person may be sick several times. This is especially true with children; hence the necessity that a number of individuals must be trained to care for these invalids.

The Physician—From the earliest history we have had the doctor to care for the sick and injured. As we have ripened in civilization, the education of the physician to a degree of efficiency, has constantly advanced. Medical education has been intensified in the last two decades until we have reached a high plane, and the demand for a yet higher qualification is ever present. Prof. Cabot, in a recent discussion, states: "That the greatest faults found among practitioners of the present time were moral and not intellectual; the greatest wrongs perpetrated by the members of the profession today come not from ignorance but from rascality. No system

of education could remove moral obliquity." Nearly every community has one or more striking examples of the truth of this assertion. It may be said that the majority of us do not do as we know. Excesses have us continually on the door step of death. The efficiency of the members of our profession is often criticised. Honest criticism is proper, but more often it takes the form of abuse. The doctor is expected to swallow any kind of nasty treatment without resistance. The essence of discussion requires a difference of opinion and can be conducted in a courteous manner.

The profession has not been satisfied with the mere management of cases of disease, but has worked zealously to know the causes. Next, for many years the profession has worked on the problem of preventive medicine, successfully to the medical faculty, but very illy understood or appreciated by the laity.

In order that the members of any community shall fairly well understand the grand work done for the betterment of their condition physically, mentally and morally, they must be taught what medicine can do for them.

We have in Iowa about a dozen cults that pretend to diagnose and treat disease. It is a very patent fact that only one truth can obtain in a given ailment; hence, it cannot be possible for so many different methods of treatment to be of benefit to the patient. The care of the sick and injured is a great responsibility, and should be undertaken only by well trained physicians. Dr. Robert Morris in an article on "Medical Incompetency" states: "Medical incompetency is all about us, but we do not stop to realize its importance until it is condensed suddenly under military pressure, and then appears in mass-unit form in the great camps." What per cent. of medical men have been discharged on account of "Inaptitude for the Service," I do not know. I am informed that it is painfully high. In order to estimate in some degree the efficiency of the profession in Iowa, I have gleaned the following facts from the report of the State Board of Health:

*Delivered at the Sixty-Seventh Annual Session, Iowa State Medical Society, Fort Dodge, Iowa, May 9, 1918.

In 1915 there were 22,367 deaths (death rate per 1000 was 10).

Quarantinable Diseases—

Scarlet fever cases reported—998 deaths, 44 or 4.4 per cent.

Diphtheria cases reported—669 deaths, 131 or 19 per cent.

Small-pox cases reported—2728 deaths, 10 or 0.36 per cent.

Anterior poliomyelitis, cases reported 19—deaths 17 or 89 per cent.

Cerebro-spinal meningitis cases reported 18—deaths 28.

Evidently all cases were not reported. I am also of the opinion the same was true of anterior poliomyelitis. The death rate cannot have been 89 per cent.

Of the 22,367 deaths, we had from tuberculosis 1335 or 5.9 per cent.; cancer, 1808 or 8 per cent.; cerebral hæmorrhage, 1564 or 7 per cent.; heart disease, organic, angina pectoris and acute endocarditis, 2702 or 12 per cent.; acute nephritis and Bright's disease, 1558 or 6.9 per cent.

The enumerated causes of death are 110. This demonstrates the fact that a large per cent. of the causes of illness are not preventable, hence must be treated by palliation or cure.

Births during the year were 44,115, nearly 20 per thousand inhabitants.

Infant Mortality—

Under one year of age, 2419 equalling 6.7 per cent.

Under five years of age, 3803 equalling 8.6 per cent.

Still births, 192 or one to 229.

Living births.

Malformations and injuries at birth 400.

Premature births 683.

Congenital debility, marasmus, etc. 306.

Other causes peculiar to infancy 102.

Giving 1491 defective children at birth, except those dying from injuries, which is not given. Deducting this number from the total number of deaths under five years of age, 3803, leaves 2312; hence for healthy children at birth, a mortality under five years of 5.2 per cent. Nearly 2 per cent. were premature births.

Dr. Jacob Sobel in a recent article published in New York Medical Journal, January 12, 1918, states that about 75 to 80 per cent. of all deaths during the first month of life, and approximately 90 per cent. of all deaths during the first ten days of life, are due to congenital diseases. This brings to great prominence the necessity of pre-natal care of maternal cases, a duty too often neglected by physicians of every community.

They know of many cases of constitutional dyscrasy, and should attempt to eliminate the same. In every community there should be a maternity care station where expectant motherhood could get proper instructions for the period of gestation. At such consultations the determination of any constitutional contamination could be known and proper treatment instituted. In all of the larger cities, the board of health has established these depots of information under the care of a registered nurse, who also give instructions for infant care.

The State Board of Health require reported all cases of communicable disease, as they are all preventable.

I have procured a copy of the report by the State Board of Health for states bounding Iowa, except Minnesota.

The secretary of the State Board of Nebraska writes me that the legislature failed to make an appropriation for their work. They prepared a pamphlet, "Your Baby and How to Keep it Well" for general distribution. It is a very commendable production.

Illinois issues a report very deficient in vital statistics. The number of births and deaths is all that is given.

South Dakota—No record from which I can make comparison. Very defective.

Wisconsin publishes a very admirable report from which I record—Births 58,014—deaths 26,667.

Diphtheria cases reported 1,704—deaths 204 or 11.9 per cent.

Scarlet fever cases reported 1,991—deaths 85 or 4.2 per cent.

Cerebro-spinal meningitis not given.

Anterior poliomyelitis, cases reported 15—deaths 12 or 80 per cent.

The comment is given, "That all cases were not reported"—death rate per thousand 10.8.

Infant mortality under one year 4753—11.6 per cent. of total deaths, or 81.9 per cent. per thousand living children.

Heart disease 2,715 or 10 per cent of all deaths.

Tuberculosis 2,310 or 8.6 per cent.

Cancer 1,781 or 6 per cent.

Cerebral hemorrhage 3,093 or 11 per cent.

Acute nephritis and Bright's disease 1,395 or 5.2 per cent.

Missouri—In report, the number of cases of diphtheria, scarlet fever, small-pox, anterior poliomyelitis and cerebro-spinal meningitis not given, but the number of deaths from each disease is given.

Deaths from—

Heart disease 3,567 or 8.7 per cent.

Tuberculosis 4,915 or 12 per cent.

Cerebral hæmorrhage 2,231 or 5.3 per cent.

Kidney disease 3,520 or 5.4 per cent.

Births 71,543, deaths 40,863.

Still births 3,889, one to 18 living children.

Infant mortality 3,880 or 8 per cent. of all deaths.

The establishment of uniformity of reports by different states seems advisable. I am of the opinion that a National Board of Health would solve the problem.

The problem of educating the public to a proper knowledge of preventable diseases is incumbent upon the profession. This should be done in a systematic, persistent, scientific way, suitable for the public to easily comprehend.

In 1910 the American Medical Association provided for a Council on Health and Public Instruction. This Council has done much, and is now preparing to advance more effectively. The proposition presents an enormous amount of work.

The control of preventable diseases by the profession cannot be advanced to a proper point without the public being educated up to a standard that will cause intelligent aid.

The laws of this country are largely enacted by the force of public opinion. Hence, the question of forming these laws becomes a social and not a medical problem.

The American Medical Association and the American Association of Medical Colleges have brought about a high standard of medical education. These with allied societies, have attempted a standardization of surgery, and more recently through the American College of Surgeons, an attempt is being made to standardize hospitals.

I am of the opinion that the standardization of the members of the profession would be an advancement beneficial to the profession and the public. This would cause a stratification of the members, placing each man where he could be most efficient, and eliminating the defectives.

Group medicine or team work is the only method of giving the best care to the sick in any community. These combinations should be organized purely from a scientific basis, and not for exploiting a gullable public. There is a limitation of individual effort. While one may attain a high standard, it is done at a fearful cost to his patients. The poor and the salaried man cannot afford to procure the opinion of high-priced specialists. It has been suggested that a staff of experts should be associated with hospitals or

dispensaries, all meeting at a given hour to examine these patients for a nominal fee. The patient or his physician could be furnished with the diagnosis, and proper treatment instituted.

The case record would be on file and open to inspection. There should be adopted by the profession some uniform method of case record, which should be obligatory on every physician; these records to be examined by competent authorities would result in measuring up the efficiency of any individual. The patient is the prime important factor to be considered.

The public is largely responsible for the deficiency in professional attainment. Examine the niggardly pittance doled out by our legislators to our State Board of Health; for instance, the State of Nebraska. Undoubtedly the same legislators made ample provision for the stock industry of the state. From an economic standpoint it would be well for liberal appropriations to be made to provide for the care of any commonwealth; the prevention of defective persons becoming a public charge or inmates of an insane hospital or some other state institutions having the care and education of defectives. In the admirable report published by Pennsylvania, among the statistics given, that of the examination of school children is particularly interesting. Among 48,787 school children of the fourth class, there were 33,552 defectives. Ninety-five and four-tenths per cent. of these were corrected by prompt treatment. This shows what can be done for defective children when undertaken at a proper time. Child welfare is being taken up all over the United States.

The two great enemies of mankind are syphilis and alcohol, especially as the offspring of the victims are very apt to be defective physically and mentally. Syphilis and alcohol cause disease and degeneracy. The victims and their offsprings fill our state institutions.

From the foregoing it will be observed that the percentages accredited to Iowa are up to the standard and we need not feel that the profession of Iowa is of low efficiency. Whatever inefficiency may be developed by the army examinations, I believe that when the war is over we will have return to this country an army of medical men who have had intensified training, a wonderful amount of experience, discipline and forced record keeping; and when distributed over this grand country, will be the cream of the profession in the United States.

*Journal of the Iowa State Medical Society:

I feel that we can feel justly proud of our Journal under the very able editorship of Dr.

D. S. Fairchild. We are given a clean, plain, up-to-date editorial record of state, national and international medical progress. The effort to encourage the maintenance of high professional ideals is nicely done.

SOME REMARKS ON THE PRESENT STATUS OF CARDIAC DISEASE*

DAVID L. RUNDLETT, M.D., Sioux Falls, S. D.

When Dr. Winkler asked me to present a paper before this Society, I told him to name a subject that he knew I was interested in, and I would be pleased to do so. He suggested I write on Valvular Heart Disease, and after thinking the matter over carefully and looking over the recent literature, and my case files, I came to the conclusion that I better take the above subject. I do this because much new matter has been developed as to etiology, and precise methods in diagnosis, in the last few years, and the mass of evidence thus obtained, points to the cardiac muscle itself as being the prime factor in most of the conditions of the heart that we are called upon to treat.

This is surely a radical change, as I can remember as a medical student of twenty years ago, and probably most of the older members of this Society will bear me out in this statement, that in our studies of the heart, much time was spent on the very careful diagnosis of the various valve sounds, when abnormal, their areas of transmission, etc., while very little or nothing was said about the myocardium. But I know of no subject in the whole realm of medicine, in which our ideas have so changed, as this one; in fact we have now learned that heart muscle is paramount in clinical cardiovascular conditions, even though valvular lesions or pericardial inflammations be the more obvious elements in the given case.

Gaskell, supplemented by Kent and His, by experiments, brought out and proved the myogenic theory of the circulation, by developing experimentally the impulse-conducting bridge in the human heart, these experiments proving both anatomically and physiologically, the nodes of initial contraction and regulation, in the wall of the right auricle at the confluence of the three large venous stream.

The modern conception of myocardial function rests on Gaskell's demonstration of the heart's potential autonomy, as proved by the capacity of

the individual fibre for stimulus production, reception, conduction, contraction and tonus, and this has so far been worked out as to render of slight consequence the minor points yet at issue between the believers in the myogenic and neurogenic doctrines.

The highly specialized muscle fibres of the heart are naked and freely anastomose, and are so disposed and inserted as to make each fibre a part of both ventricular walls, and so attached as to afford the maximum of required contraction with the least expenditure of energy.

MacCallum has demonstrated the presence of a separate band surrounding and strongly supporting both the mitral and aortic orifices.

In addition to these investigations may be added, those of MacKenzie's when he demonstrated the use of polygraphic tracings of the various pulses, and with Cushny and Lewis who established the nature, importance and diagnostic signs of auricular fibrillation.

The introduction of the sphygmomanometer, and its use combined with auscultation, whereby we can be reasonably accurate in our estimate of systolic, diastolic and pulse pressures, has also added to our precise methods.

The x-ray has greatly helped us in our previous endeavors to outline the heart as to shape and size, aortic aneurisms, etc.

There are many more methods in daily use in the scientific laboratories and in the hospitals, where time is not so great a factor as in private work, for the diagnosis of conditions and to bear out the contention that the myocardium is the factor at fault, but I have not time to speak of them in this short paper.

Not only have the advances been made in the preceding theories but also along the line of etiological studies. For a long time we knew that acute articular rheumatism, and later tonsillitis, were often precursors of heart disease. We now know that acute infections and chronic focal infections are great factors in production of these disorders.

Acute rheumatism is probably the most potent factor in the etiology of cardiac disease, and thanks to the work of Poynton and Payne in Great Britain, and E. C. Rosenow in America, we know this disease is due to an infection by a specific organism. This same organism (*streptococcus rheumaticus*) together with *streptococcus viridans*, is responsible for chronic recurring infective endocarditis, and that various other streptococci exhibit selective affinities for the endocardium and myocardium.

Then comes the present knowledge of chronic

*Read before the Northwestern Iowa Medical Society, October 31, 1917.

foci of infection accountable for acute rheumatism, various chronic diseases of the joints, obscure anemias and ill-defined conditions associated with chronic malnutrition and semi-invalidism, which we have formerly been unable to account for because of our ignorance of the infective basis, and of the various foci of infection.

The sources of chronic recurrent infections are:

First, and most important, tonsils.

Second, accessory sinuses of nose.

Third, gums, teeth and jaw.

Fourth, prostate gland and deep urethra.

Fifth, other points of chronic infection, such as the gall-bladder and appendix. Another factor brought forward since the discoveries of Wassermann with his blood reactions, is the role played by syphilis in the majority of the aortic lesions.

All cardiac cases fall readily into two broad age groups, one representing the first three decades of life, embracing congenital lesions and showing a predominance of the mitral endocarditis; the other covering the later periods of life, including chiefly the myocardial degenerations, relative or secondary, mitral insufficiencies, and diseases of the aortic valves, of the aorta itself, and of the general arterial system.

The relative rarity of aortic disease in young people is now made clear by this recently attained knowledge of the extraordinary frequency of syphilis as an etiologic factor in the lesions of the adult, and that infections of the myocardium, and yet more frequently of the aorta and aortic valves, is a relatively early event in a surprisingly large number of cases of lues.

Once established the disease is usually slow and persistently progressive, not becoming clinically manifest as a cardiovascular lesion until the late tertiary period, years after infection, where all other clinical signs of the original causative disease may be, and usually are absent. Hence the great importance of antisyphilitic treatment in the older cardiovascular group, is self-evident.

Another factor may be found in the reaction of the myocardium to acute prostrating infections of various kinds, and we must learn that through prompt recognition of these toxemias, and greater care during convalescence, we may often prevent serious and progressive damage to the heart.

This is often seen in the subjective weakness which follows rheumatism, true influenza and scarlet fever. We must also bear in mind the marked discrepancy between the degree of weak-

ness felt by the patient, and the comparative small loss of skeletal muscle strength, as is seen in diphtheria where the toxæmia has affected the nervous mechanism of heart combined with the degenerating influences on the myocardium itself, with often sudden disaster.

The greater damaging of the cardiac muscle can be readily understood if we stop to consider for a moment that the intrinsic circulation of the same is proportionally tenfold that of the skeletal muscles, and that this delicate and highly specialized structure can never rest, and is constantly flooded with this toxic blood, during all acute infections, and this can be confirmed by polygraphic tracings, showing various degrees of auricular fibrillation and heart block, showing interference with the bundle of His.

We can often also demonstrate by percussion, slight or often marked degree of dilatation which give no auscultatory signs during the active stage of these diseases or early in convalescence.

We should also put aside the erroneous notion that fever, in itself and of itself, greatly modifies heart sounds, and if we note more carefully our hearts during these conditions, we will find oftentimes subjective symptoms which will enable us to protect our patients from attempts at forced resumption of life's activities, and often save them from a progressive myocardial degeneration, which may first become manifest by symptoms years later.

There is another cause for these cardiovascular cases, and one I think that is often overlooked by the general practitioner; and that is the effect of nerve strain and worry. In 1914, Dr. J. S. Lankford of San Antonio, Texas, addressed a letter to about six hundred health officers, medical directors, and leading medical men in the United States, the Latin American Republics, England, France, Germany and Japan, inquiring whether there had been an increase in diseases of this class in the last twenty years, and if so, the cause. Nearly five hundred very interesting replies were received. Discussion of this important subject cannot be taken up in detail here, but this essential fact may be mentioned. The consensus of opinion was that there had been a great increase, and that it is chiefly due to nerve strain. A striking fact is that the two nations showing by far the greatest increase, are rice eating Japan and meat eating America, the two nations living under the greatest nerve strain and worry.

It would seem that we have first, nerve strain and worry, more or less continuous, then impaired digestion and autointoxication in which

potassium indoxyl sulfate and its allies, play a considerable part, than high blood-pressure, a poisoned heart, overworked kidneys, all leading ultimately to arteriosclerosis, chronic myocarditis, and nephritis. It is this group chiefly that threatens life in the long run, because there seems to be no promise of relief from the conditions causing it.

We have thus two great problems before us in these cardiac cases.

First—Prevention.

Second—Early recognition of decompensation.

This brings up at once the questions as to how we are to recognize these processes early, and what to do to prevent them.

At the start I wish to say that it is a fundamental and damaging error to assume that one must await the onset of pulmonary or renal congestion, hepatic engorgement, marked dyspnea, ascending edema and flagrant and obtrusive dilatation, before feeling justified in active therapeutic interference in heart disease. Yet these are the signs of "incompensation" as given by every text-book. These major symptoms represent the expression of extreme cardiac weakness, and fortunately for the patient, often serve at once as danger signals and emergency brakes.

On the other hand we now know that the mere sensation of weakness, inability to perform sustained work, lack of concentration, drowsiness, apathy, disturbances of sleep, and many other similar symptoms which of themselves are not pathognomonic of cardiac insufficiency but common as suggestive manifestations of it, may become important confirmative factors on diagnosis. In many instances the condition of so-called neurasthenia and psychasthenia, has for a causal factor these early incompetencies.

Subjective dyspnea, together with the lesser grades of manifest shortness of breath on slight exertion, and the fact that slight tasks ordinarily performed easily, become a burden, are often very significant, and when there develops actual distress or pain, we commence to deal with one of the most interesting phases of the modern development in the diagnosis of cardiac disease.

Many observers, especially Henry Head, have brought to our notice the astonishing variations in discomfort and pain, and the distribution of these, in places often remote from the heart itself.

The auricle may refer this pain to the lower axilla and shoulder, the ventricle not only to the chest wall, but to the epigastrium, inner aspect of upper arm, ulnar surface of forearm, wrist and fingers.

Pain from the ascending aorta and valve region may effect the entire neck and occiput, and last, cases of true angina pectoris may involve the entire chest, neck and upper abdomen.

Mere discomfort of cardiac origin is so often epigastric that patients may come to you complaining of the stomach only, and we must be careful not to overlook cardiac disturbances in examining these cases. This is especially true in patients over forty years of age.

I know of operations being done where this pain was referred to gall-bladder region, stomach and descending colon, where tenderness was also present. The source of pain in cardiac disease may vary considerably, but is mainly due to the distress of hollow muscle overstrain, fatigue and lessened blood supply, whether local or general. A similitude would be the painful spasms of the intestinal tract, and while the heart like other hollow viscera, is often quite insensitive as to its parenchyma, it undoubtedly reacts excessively to overstrain, combined with insufficient blood supply or actual exhaustion. Even our old ideas of true angina pectoris being the result of disease of the (coronary) arteries, have been exploded, as postmortems have shown cases where marked disease of the arteries has been found, and during life the patients have not had any angina, while on the other hand this syndrome has been present in patients with marked myocardial degeneration, in which no decided disease of these arteries could be demonstrated.

I have noticed two things to be invariably present, however, in all cases of severe attacks, viz., a certain amount of dilatation, and a sharp rise of blood-pressure. It is probably true that several factors enter into this process.

It would be difficult to make a positive diagnosis of cardiac insufficiency on the subjective symptoms alone, except in the above condition, which is usually unmistakable, but if material insufficiency is present, the modern percussion methods almost invariably show an extension of the cardiac boundaries, which come under control by rest and medication, and reveal to the careful observer that dilatations really do exist. The Röntgen rays here are often of marked help. I am sorry to say however that these are the cases so often overlooked.

Formerly we depended on loosely determined standards as to the size of the heart, without taking into consideration the relative size of the patient, and the relative muscular and osseous development. We also had the erroneous belief in the existence of normal hearts of great size, which lacked both hypertrophy and dilata-

tion, and also depended too much on the old flat finger percussion method to define the cardiac border, which method, since the introduction of the Rontgen rays, has been found to be inadequate.

If, however, we use ortho percussion, with or without the employment of the threshold method of Goldscheider, (which are fully described in the work of Hirschfelder in his *Diseases of the Heart and Aorta*, pages 85-93 to 98 inclusive), one may define both the left and right transverse radii of the heart with surprising accuracy. This method has been shown to give us nearly correct measurements, by later examination by Rontgen rays.

We should, therefore, no longer be satisfied with the percussion of the left border and larger part of the right ventricle, as we formerly were, but determine the medium right and medium left measurements along the fourth and fifth interspaces respectively, according to the method adopted by Moritz and Dietlen, and VonGrodel, who have definitely established normal variations for the recumbent and sitting postures respectively. If we do this, and lay upon the shelf the old land marks, viz., mamillary, and parasternal lines, which we now know to vary so in various individuals, and adopt exact measurements from the mid-sternal line, we will soon see that we have overlooked in the past many cases of slight dilatation. As a help to the proper estimation of the proper size of the heart for an individual, I will refer you again to Hirschfelder's work, page 96, where he has worked out a table of relative normal sized hearts, for the various heights and weights, for both men and women. In this connection it is always well to remember that the hearts in children are usually relatively larger, and lay in a more transverse position, than in adults.

There is one form of heart that Dr. Chas. L. Green has called our attention to, and that is what is called the drop heart of congenital universal asthenia. This is found in persons more or less chronically under-nourished and poorly built, who suffer from gastroenteroptosis or visceroptosis.

In these patients, the heart itself, when undilated, yields a very narrow area to percussion, is extremely movable, and hangs low, as do the other organs. This heart is easily dilatable, and shows very little or no tendency to hypertrophy, even when suffering from long continued overstrain. Such hearts react promptly, however, to medication, proper oversight and directions, and improved nutrition. One can see that if we fail

to take this class of hearts into consideration, they can become greatly dilated and still be within the limits of the normal boundaries.

In studying the heart sounds, the chief need for us is a thorough familiarity with the characteristics of the normal tones, their accentuation and permissible variations, together with the idea firmly fixed in our minds, that if there is a change of sound or an absence of a sound, we want to know the reason for such change or absence. This is particularly important in the acute infections, to enable us to recognize the earliest signs of an endo or myocarditis, as in some of these lesions, especially a mitral stenosis, no change whatever is ordinarily apparent for a long time.

Finally in these dilatations, and this is of cardinal importance, we should note the response of symptoms, and more especially of any cardiac outline established by percussion, to the use of rest, and therapeutic doses of digitalis, or its allied drugs.

Frankel and Cloetta have apparently established conclusively, the fact that no demonstrable change occurs in the outline of the *normal heart* under their use, and it is claimed, even in that of well compensated diseased heart.

We can thus see that if any decided change in outline occurs under moderate doses, one has a reasonable assurance of a pre-existent dilatation, and to this is usually added a decided and confirmatory amelioration or disappearance of pre-existing subjective symptoms.

This procedure is so simple, and results are so often direct and unmistakable, as to leave no justification for its neglect, when digitalis has been shown to have no effect on a normal heart.

Up to this point I have dwelt more upon the inability of the myocardium to do its work, than upon any disease of the valves themselves, and we should always consider carefully, when we have murmurs at the aortic and mitral areas, whether the incompetence of these valves is not wholly due to the weakening of the bands of fibres surrounding those orifices, (those discovered by McCallum and mentioned early in this paper) rather than to vegetations or puckering of the valve flaps.

The mitral and aortic valves are the ones most commonly involved in diseased processes, the mitral incompetencies and stenoses occurring in early life, the aortic incompetencies and stenoses occurring most often after forty years of age. This I noted earlier in the paper.

What I have already said as to early diagnosis in myocardial incompetencies, applies as fully

here. If we wait until we have the jumping pulse, diastolic murmur, best heard at the apex, marked enlargement of the heart to the left and downward, and pulse pressure of from 100 to 150 m.m., we of course can diagnose an aortic regurgitation, but as late as this, how much good can we accomplish? If on the other hand, as Dr. Chas. L. Green pointed out ten years ago, we discover an apparent splitting of the second heart tone, heard over the third left intercostal space near the sternum, during a routine examination, in persons above forty, we have probably discovered the earliest sign of aortic incompetency. As he says, "The split second sound is usually inaudible at any point removed from the immediate vicinity of the third left sternochondral junction or third left interspace near sternum. It is in nearly every case alternated later with a distinct but atypically short diastolic murmur, which has tended to become established as a persistent murmur, or has occasionally entirely disappeared." "If you look carefully as early as this, you will invariably find a capillary pulse present, varying with the intensity of the auscultatory phenomena, together with a radial pulse of the modified Corrigan type." In these early cases we may do good.

Of the mitral lesions the regurgitant murmur is very apt to be a relative one, and show no symptoms until the heart becomes uncompensated, when we have the train of symptoms enumerated earlier in this paper. A large majority of these mitral systolic murmurs, if detected early, and properly treated, in my experience clear up, showing the valve was not permanently damaged.

We cannot say the same, however, of the mitral stenoses, in which cases your presystolic murmur persists, and after a time we have the typical small pulse, thrill felt most distinctly in the second right interspace, enlargement, due to the obstruction and hypertrophy disturbance of the function of the sino-auricular node and bundle of His, with auricular fibrillation and other serious heart and systemic results.

I might go on and enumerate the principal signs and symptoms of the various valve lesions, but it is not the valvular trouble that causes death, but the complicating myocardial incompetency, and as I have discussed that pretty thoroughly, I won't spend more time on this part of subject but pass to a general outline of treatment.

In regard to treatment, of course I have in a general way hinted at the same already, but I will just take a few moments now to review the outline of same in general, and speak of the handling of a few symptoms so commonly met with.

The first principle in all these cases is rest, and should be absolute rest in bed, with the enforced use of urinal and bedpan, and in early cases this, combined with a light easily digested diet, is all the treatment required.

We should at once search for the cause of the condition found, investigating the tonsils, accessory sinuses of nose, teeth, gums and jaws; in fact all the possible foci where infection may remain dormant, and if removal of these foci is possible, this should be done, followed by the use of autogenous vaccines, if possible to obtain material for making same. Examinations of the blood for lues or other bacteremia, are called for, especially the Wassermann reaction if the aortic valve or aorta are shown to be involved, and if positive, intensive anti luetic treatment instituted.

The elimination from the bowels should be kept in as nearly normal condition as possible, but if there is much hepatic engorgement, the use of calomel in one to two grain doses, or blue mass in five grain doses at night, followed by a saline in morning, will oftentimes relieve the symptoms of distress. At other times, where the stomach will tolerate it, I have found that a good grade of mineral oil taken at bedtime, in sufficient doses to cause daily easy evacuations, is the remedy of choice.

This brings us to the discussion of the use of digitalis or its allies in the treatment of cardiac decompensation. No remedy can be of more service, and no remedy can do more harm, if improperly used, than this drug. Too many men in our profession closely ally digitalis with every abnormal sound heard over the cardiac area, and nothing can come further from the true use of this drug, than this indiscriminate use. One should always remember when treating a case of cardiac decompensation which shows dilatation by percussion, but no murmur, that the onset of a murmur after the use of this drug probably means that the myocardium is coming back, and that the blood is being forced through the valve opening with sufficient force to give the sound, while before it was used, there was not force enough to give this sound, and we should never increase the dose of drug, as I have often seen done, on the assumption that the louder murmur meant a greater leak. Another point to always remember is that digitalis, or any other drug of its class, is useless as a curative agent to the valve lesion itself. Professor Hare of Philadelphia, has so ably pointed out the indications for the use of digitalis, and its contraindications, in a recent lecture to his post-graduate class, that I take the liberty of quoting his own words. "In mitral regurgitation, with ruptured compensation

arising chiefly from cardiac fatigue, digitalis, in proper dose, is of course, useful provided rest is given. The rest of the body and the slowing of the heart by the drug may soon restore cardiac function, and the drug, if properly used, is safe if there is no lesion of the heart muscle, the evil results of which will be emphasized by its physiologic action. In some instances the history is that the patient receiving large doses of digitalis, is at first improved wonderfully, and then, within a short space of time, the last state of that man is worse than the first, probably because the large doses which were needful in the beginning have been continued until, through the prolonged effect of each individual dose, a cumulative influence has induced a digitalis poisoning of the heart, although the individual doses may not in themselves be poisonous.

"It is in connection with lesions usually associated with mitral stenosis that digitalis is to be used with the greatest caution, or not at all, and it is in connection with these lesions that digitalis may, on the one hand, be life saving or death dealing. If the problem is simply one of obstruction at the mitral orifice, the increased driving power as given to the right ventricle by the digitalis, pushes the blood through the obstructed orifice more completely, and the slowing of the ventricle gives more time for it to be adequately filled from the auricle. If, however, as is the case in many instances, the lesion is not only a narrowing or obstruction of the orifice, but consists in an erosion and partial or complete destruction of the fibers of His' bundle, the digitalis may do great harm for the disease, by interfering with the passage of the impulse from the auricle to the ventricle, may induce a partial heart-block, and when digitalis is given, this drug, by stimulating the vagus, makes it more difficult for the remaining fibers of His' bundle to perform their function, with the result that a partial heart-block is changed into a complete heart-block. This is the more true, as it would seem probable that digitalis, apart from any influence on the vagus, directly diminishes the conductive power of His' bundle. This may result in sudden death or a great exaggeration of cardiac distress. Unfortunately for the practitioner, it may be difficult or impossible to determine the presence of partial heart-block without the use of polygraph. On the other hand, if the heart-block is complete, as the result of total destruction of His' bundle, and the patient has survived the onset of complete heart-block, as he often does, there is now a condition developed in which the ventricular wall, finding itself deprived of its

normal impulse to contraction, begins to originate its own impulses and saves its life by calling in this substitute mechanism. As a rule, this substitute mechanism results in an exceedingly slow heart-rate, and the complete block in His' bundle, having practically cut off the inhibitory restraining influence of the vagus nerves, which act chiefly on the auricle or upon His' bundle, the digitalis is free to act as a direct stimulant to the heart muscle, and the result is that the ventricle beats more rapidly and approaches its normal rate. The danger of excessive doses of digitalis in this condition is, therefore, not to be overlooked, since the ventricle, being deprived of indirect vagus influence, may be stimulated into excessive systole and rapidly exhausted by the action of the drug. Many cases of sudden death in patients suffering from cardiac disease, who have at first greatly improved under treatment, are explained by the recognition of the importance of a lesion in His' bundle and the action of digitalis upon it.

"Time permits me only to discuss one more important cardiac condition in which the digitalis, properly used, produces very beneficial results, namely, in so-called auricular fibrillation. Not because it is able apparently to correct fibrillation, which probably always continues, but because by its decrease of the conductivity of His' bundle it prevents the ventricle from being started off into contraction so frequently that its beat is inadequate and its period of rest is cut down to almost nothing. It also does good in these cases by stimulating the right ventricle, so that the blood is delivered into the fibrillating auricle with sufficient *vis a tergo* to make a better delivery of blood through the left auricular-ventricular opening into the left ventricle. In some cases it is possible only by means of the polygraph to determine whether full doses of digitalis are to be used to put aside the evil effects of fibrillation or whether they are to be absolutely tabooed lest they induce heart-block.

"Last of all, let me say a word in regard to myocardial degeneration and the use of digitalis. Physicians are too prone to forget the teachings of pathology and of the postmortem room. If they are not optimists they probably will not be successful practitioners, but optimism must not go so far as to make a man blind as to possibilities. The physician, therefore, who in a case of failing heart administers digitalis in what he thinks to be suitable doses and fails to get results, must not feel pessimistic as to the value of digitalis. In cases of cardiac failure we must recognize that if the heart muscle is degenerated and

its fibers segmented, neither digitalis nor anything else will restore it to normal functional activity. Sometimes the underlying cause of myocardial degeneration may be renal disease or the causes which induce renal disease. It originates in the course of the acute infection, in which case digitalis as a cardiac stimulant, often fails, to our great disappointment, for reasons which are obvious when we stop to think about them, or the condition arises as the result of syphilis, metallic poisoning, or the result of age superimposed upon partial degeneration originally induced by some acute infection like rheumatism, influenza, typhoid fever, or diphtheria. Digitalis deserves no reproach when it fails in many of these cases, for it always will and must fail until some drug is found which can develop new tissue for old, and when such a drug is found, to use a biblical expression, 'there will be no sorrow, neither will there be any more pain,' and, possibly, I may add, neither will there be death."

"When digitalis fails to do good, provided that an active preparation is employed, such as an infusion made from leaves, which has been physiologically tested, or digitalone, which, in concentrated form, represents all the active ingredients of the leaf, and good results fail to accrue, the condition which is present makes its normal physiologic action impossible, or the physician has made a mistake in diagnosis or dose."

In regard to strophanthus, I sometimes in older persons, use strophanthone hypodermically or intravenously in doses of 1/128 or 1/250 grain where digitalis does not agree, or where it does not give results: I have often seemed to obtain better results.

Don't ever, however, change from digitalis to strophanthus without an intermission of several days between the two drugs, as fatal results have been known to occur. Caffein and sodium benzoate is a good preparation to use tentatively as a cardiac stimulant, but is very apt to cause insomnia from over stimulation of the cerebral centers.

Strychnine is also a good drug to use, especially in these relaxed asthenic states, where you wish to take up the slack, so to speak. For the dyspnoea with restlessness and cough, I have never found any drug that would take the place of morphine, hypodermically, and it can often be used in rather large doses, and I consider it often a *life saver* in these conditions.

For the edema that often accompanies these cases, there are many remedies recommended, and at times none of them are of apparently any benefit. One of the most reliable prescriptions

that I use, especially with large, engorged livers, with little involvement of the kidney function, is as follows:

Rx. Pulvis digitalis,
Hydrargyri chloridi mitis,aa. o.80

Pulvis scillae,
Caffeinae,
M. et div. in capsul. no. xii
Sig: One three times a day.

Of course you have to watch the patient carefully for salivation, and it is seldom safe to use over twelve capsules at any single series of doses. Another drug I want to call your attention to, and that is apocynum cannabinum, or Canadian hemp. Dr. Hare calls this drug the "vegetable trocar," but it does not always live up to its name. I give of the strong Homeopathic tincture, from four to eight drops three times a day. This is especially good in cases of ascites where digitalis fails.

Another method I have often employed for edema, especially where there is marked ascites, is scarifying the lower extremities. I remember one case I had several months ago where digitalis, diuretin, apocynum, and even tapping of the abdomen did no good. Finally I scarified the limbs and they drained for days and days, the edema and ascites commenced to recede and then the digitalis seemed to take hold; and that patient is alive today, and doing a fair amount of light work, with little or no difficulty.

I have never seen any serious infections follow the incisions, probably because the serum that drains off is bactericidal. There is no measure, in obstinate cardiac dropsy, that I can recommend more highly.

There is one other therapeutic hint that I want to leave with you—I have found it useful in a number of cases of myocarditis with failing compensation. Gaseous distention is one of the chief complaints. Much may be done for it by regulation of the diet. Ordinarily the food should consist of milk, buttermilk, well-cooked cereals, chicken broth, custard, junket, orange juice, occasionally ice cream, with Vichy or other alkaline water as beverage. Some patients, however, do not do well on a diet largely fluid, and have less gas on a diet of chicken, lamb chops, rice farina, soft boiled eggs, baked apple, etc. But all too frequently, no juggling of the diet has any effect. You may then find the Bulgarian bacillus cultures of great benefit. I prefer the tablets given with a little sugar-water to any other form.

In serious edema, I use a salt free diet with the liquids limited to about 1500 c.c. in twenty-four hours. I have often seen marked benefit from this hint.

There are of course other conditions closely related to cardiac disease, and other symptoms I have not enumerated, as well as other drugs that are at times of service, and I feel I have not covered this subject as it should be covered, but to do so will be beyond the province of a paper, that I consider is already too long. If I have brought up any new hints, that will be helpful to you, I shall be satisfied.

INDICATIONS FOR CESAREAN SECTION*

NICHOLAS SCHILLING, M.D., F.A.C.S.,
New Hampton

It is a well established principle that if surgical results are to be gratifying to all concerned, the indications for operation must be clear cut and definite. This is preeminently true of Cesarean Section. And yet about the only positive indication for this operation is "a clean case" at or near term that has a major degree of pelvic contraction and deformity. But such a situation is not the one which would present any particular difficulty. The chances are that delivery would be accomplished by means of a clean laparotomy and that the post-operative history of mother and child would be uneventful. Absolute mechanical hindrance to delivery becomes quite a different question when the birth canal has become infected through numerous vaginal examinations and repeated attempts at forceps delivery.

If under these circumstances a classical Cesarean section is performed, the result will be fatal with an inexorableness that is almost uncanny in its certainty.

Of course, we all know that every primipara should be carefully measured and examined several weeks before labor is expected, but this knowledge is ridiculously futile when, at the door of the patient's home, we are greeted by one of our medical colleagues with the exclamation: "Doctor, she can't be delivered with forceps; we will have to do a Cesarean section."

Craniotomy on a living child is an absolute barbarity that no scientific and self-respecting surgeon would care to commit. Moreover, the maternal mortality in this procedure is around 8 per cent., a rate that hardly bears comparison

with expedients that take into consideration the life of the child.

In fact, the clinical fate of these patients depends not so much on the kind of operation that is performed as it does on the degree of virulence of the infection that has been introduced into the uterus. It is true, however, that, other things being equal, the nearer the operative field is to the pelvic outlet the better will be the prognosis.

I suppose that the explanation for this phenomenon resides in the fact that an infected thrombus in a small vessel is more apt to remain localized than one situated in a large venous sinus. And, it is well known that the pelvic peritoneum has a much greater capacity for localizing and overcoming infection than has the same structure in the upper abdomen. Moreover, it is an old experience that surgical shock will be less as the site of operation is more peripheral.

At any rate, there is no question about the striking and superior results obtained even in "unclean cases" when the incision in the uterus is confined to its lower segment. It is more than likely that the comparatively low death rate of extraperitoneal Cesarean section is due more to the physiologic facts enumerated above, than it is to the mere circumstance that the peritoneal cavity has not been invaded. Medical tradition, probably accounts for the general notion that the pelvic peritoneum is less resistant to infection than is the cellular tissue through which the uterus is approached in the operation mentioned. It should occasion no surprise, therefore, to find that recently several authors have described a transperitoneal cervical Cesarean section with results that are almost too good to be true.

In a hundred and ninety-four cases summarized by Hofmeier, there were only three material deaths. When it is added that 87 or 50 per cent. of them were "unclean cases," it is plain that if such results can be generally duplicated, the question of contracted pelvis, complicated by infection in a parturient woman, is solved. And there would seem to be no good reason why this can not be done. The technique is much more simple than that of the various extraperitoneal procedures. It is best described by Baisch in an abstract in the *Journal of the A. M. A.* of December 11, 1915.

"The incision, 10 cm. long, is made in the linea alba, through skin and peritoneum, and the uterus is opened on the median line in the thin and stretched lower segment. No attempt is made to separate the bladder, or to make the incision in the peritoneum transverse, or to loosen up the peritoneum. If necessary to tampon the uterus,

*Read before the Austin Flint-Cedar Valley Medical Society, Waverly, November 13, 1917.

after extraction of the child, the tampon is brought out through the vagina. No attempt is made to drain the abdominal cavity either through the abdominal wall or the vagina. The distended uterus holds the intestines out of the way so they do not present at all, and any fluids from the uterus are soaked up by two flat sponges wrapped in gauze compresses and worked down between the uterus and the abdominal walls. The incision in the uterus is reenforced double with peritoneum sutured over the uterus suture, and this is covered with omentum. This prevents any escape of uterus contents into the abdominal cavity. By making the incision in the uterus in the most stretched segment, the coaptation and suturing of the thin walls proceed with special ease, and during the involution of the organ there is no traction or pulling aside of the walls. The fold of peritoneum in that region is so voluminous that it can be laid in a double fold over the suture in the uterus wall; there is not such an excess of peritoneum in the fundus region, so this is impossible elsewhere. Conditions therefore permit as simple and rapid recovery as after the extraperitoneal technic."

Only thirteen of the total nineteen cases that Baisch treated by this transperitoneal technic, were "clean" cases. The others had been repeatedly examined by midwife or obstetrician, without gloves, and in several the membranes had ruptured twelve, twenty or twenty-four hours before. Two of the women were already slightly febrile and the fluids in the uterus were fetid. Labor had dragged along for days in many cases; in two primiparas of forty, seventy hours had elapsed since the birth process had begun, and with several others, thirty or forty hours had elapsed. In every instance the puerperium was normal in every particular, although the conditions were in many of the cases less favorable than in the extraperitoneal series. In the two febrile cases, perforation of the living child had even been contemplated. The children were all delivered alive but one died from an intracranial hemorrhage; the operation had evidently come too late in this case. No high forceps, prophylactic version, premature delivery or a pelvis enlarging operation was required in any of the cases. The operation was done on account of contracted pelvis, rigid birth passage in elderly primiparæ, cicatricial atresia of the vagina, etc. Eight of the women were allowed to leave the clinic the tenth or eleventh day. The transperitoneal technic is thus proved to have all the advantages of the extraperitoneal method and to surpass it in some respects. When compared with the older method of Cesarean section the

advantages of this operation may be summed up as follows: The field of operation is more peripheral and, consequently, there is less shock, the peritoneum of the upper abdomen is neither traumatized nor soiled, eliminating, practically, the possibility of general peritonitis, the uterus is incised along a line where its wall is thin, thus facilitating repair and favoring involution; the uterine incision is not apt to encounter the placental or other large vessels, a circumstance which lessens hemorrhage and tends to reduce to a minimum the probability of thrombo-phlebitis with subsequent sepsis and pyemia, for after the removal of its contents the uterus is treated in accordance with the rules observed in the case of any other incised hollow viscus. It is closed so securely that leakage can not occur and in such a way that the formation of post-operative adhesions is largely prevented. But, above all, this operation can be performed at a time when the classical operation would be no longer safe.

While the above considerations apply more particularly to those cases which present a positive mechanical hindrance to delivery, we are often face to face with real obstetric problems when we are called upon to determine the so-called relative indications for Cesarean section. No doubt, there are doctors so lacking in accomplishment, that even with the aid of a tape line and a pelvimeter, they could not tell in a given border-line obstetric case, whether the head would engage and pass through the pelvis or not. Their lack of familiarity with the "newer methods" does not enable them to compute the measurements of the pelvis with that unfailing accuracy so indispensable in this kind of work. For the same reason they can not estimate, to the fraction of an ounce, the weight of the child and determine exactly the size and consistency of its head. It should never be forgotten, however, that in a woman in labor, the result may be influenced by many factors that can not be mathematically calculated. Plain living, active habits insuring a high degree of physical endurance and a stable, confident state of mind, will all contribute to modify the relative indications for Cesarean section. So that from a practical standpoint, it may be best, in a given instance, to give the woman, especially a primipara, a four to six hours test in labor before a more radical procedure is advised. It need hardly be emphasized that whenever Cesarean section is among the measures contemplated, no vaginal examinations should be made: the progress of labor must be judged by observing the character of the pains and by means of external abdominal and rectal examinations. Experience will bear me out in saying that by pursu-

ing this course we are sometimes unexpectedly and agreeably surprised by the results obtained. I want to say, though, that in the practice of obstetrics there is such a thing as being too conservative. It is surely no exaggeration to say that a clean section done in a clean place by a clean surgeon is less to be dreaded than the traumatism, morbidity and invalidism often resulting from a high forceps operation.

Of course, the old objection "once a Cesarean section, always a Cesarean section" is a valid one, and no practical obstetrician would think of disregarding it. But, on the whole, we may be sure that there will be fewer dead babies and fewer invalid mothers if the relative indications for this operation are judiciously extended.

Several years ago, in an elaborate criticism, one of the leading "sticklers" for the preservation of the old obstetric art, as he termed it, included in his plea for a more restricted application of Cesarean section, the general protest that the operation was "easy" and that it was "spectacular." I suppose that these objections would appeal to most of us as distinct advantages. Whether eclampsia, placenta, prævia, tumors, prolapse of the cord, transverse or face presentations, failing heart or general exhaustion will constitute indications for the performance of a Cesarean section, will depend largely on the skill and judgment of the surgeon in charge. For the management of these cases, no universal rule can be formulated.

BIBLIOGRAPHY

- Andebert, M.—La Cicatrice utérine après la Césarienne, *Annals de Gynecologie et D'Obstetrique*, May, 1913, vol. x, p. 290.
 Andebert et Fournier—Operation Césarienne. Soins pre-operatoires. *Annals Gyn. et D'Obstetriques*, Oct., 1910, vol. vii, p. 821.
 Andrews, H. R.—Uterus Removal after Performing Cesarean Section, *The Lancet*, July 18, 1914, vol. ii, p. 159.
 Baisch, K.—Cesarean Section in the Cervix, *Jour. A. M. A.*, Dec. 11, 1915, vol. lxv, No. 24, p. 2127. Abstract: *Zentralblatt fur Gynakologie*, Leipzig, Oct. 30, vol. xxxix, No. 44, pp. 763-778.
 Bar, P.—Conservative Vaginal Cesarean Section, *Jour. A. M. A.*, May 22, 1915, vol. lxiv, No. 21, p. 1799. Abstract: *Archives Mens. D'Obstetrique et de Gynecologie*, Jan., 1914, pp. 1-48.
 Brown, W. M.—Modification of Technic of Abdominal Cesarean Section, *Jour. A. M. A.*, Oct. 23, 1915, vol. lxv, No. 17, pp. 1486-1487. Abstract: *Amer. Jour. of Obstetrics and Diseases of Women and Children*, York, Pa., Sept., vol. lxxii, No. 3, pp. 385-576.
 Couvelaire, A.—Considerations sur La Technique de L'operation Césarienne conservatrice. *Annals de Gyn. and D'Obstetrique*, Nov., 1909, vol. vi, p. 637.
 Davis, Asa B.—Cesarean Section. *Bulletin of the Lying-in Hospital of New York City*, June, 1914, vol. ix, No. 4, p. 276.
 Druskin, S. J.—Cesarean Section, Three Methods of Performing Operation with Illustrative Cases. *Medical Record*, May 30, 1914.
 Druskin, S. J.—Extraperitoneal Cesarean Section, *Amer. Med. Ass'n.*, May 2, 1914, vol. lxii, pp. 1383-1384.
 Fabre, M.—Societe Obstetricale de France—*Annals et Gyn. & D'Obstet.*, Nov., 1909, vol. vi, p. 699.
 Fieus, G.—Fibromes du Segment Inferior deux Observations D'operation Césarienne, *Annals de Gynecologie et D'Obstet.*, March, 1909, vol. vi, p. 129.
 Fuchs, H.—Kaiserschnitt wegen totaler Ankylose beider Hüftgelenke, *Munchener Wochenschrift*, April 28, 1914, Jahrgang 61, No. 17, p. 946. Abstract: *Monatsschrift fur Geburtshilfe und Gynakologie*, Band 39, Heft 4.
 Gillhorn, Geo.—Three Cases of Extraperitoneal Cesarean Section, *Jour. A. M. A.*, Jan. 16, 1915, vol. lxiv, No. 3, p. 196.
 Gillmore, Robert T.—Abdominal Cesarean Section under local

Anæsthesia, *Surg. Gyn. and Obstetrics*, May, 1915, vol. xx, No. 5, p. 622.

Herrgott, A.—Quelques Considerations sur Les Sutures dans L'Operation Césarienne, *Annals de Gyn. and D'Obstet.*, Nov., 1909, vol. vi, p. 690.

Hirst, Barton Cooke—The Technique of Extraperitoneal Cesarean Section, *Bulletin of the Lying-in Hospital of New York City*, June, 1914, vol. ix, No. 4, p. 249.

Hussy, P.—Symphysiotomy or Cesarean Section, *Jour. A. M. A.*, Dec. 18, 1915, vol. lxv, No. 25, p. 2204. Abstract: *Archiv fur Gynakologie*, Berlin, V iv, No. 3, pp. 393-579, last indexed Aug. 28, p. 833.

Hofmeier, M.—Zur Kaiserschnittfrage, *Munchener Med. Wochenschrift*, Jan., 1916, Jahrgang 63, No. 1, p. 1.

Holmes, Rudolph Wieser, A Criticism of the Promiscuous Indications for Cesarean Section, *Surg. Gyn. and Obstet.*, Nov., 1915, vol. xxi, No. 5, p. 636.

Kustner, O.—Cesarean Section for Shoulder Presentation, *Jour. A. M. A.*, Sept. 4, 1915, vol. lxv, No. 10, p. 912. Abstract: *Zentralblatt fur Gynakologie*, Leipzig, July 24, vol. xxxix, No. 30, pp. 523-538.

Kustner, O.—Weitere Erfahrungen über den Extraperitoneal Kaiserschnitt, über seine Indikationsstellung und Fethodik—*Munchener Med. Wochenschrift*, March 24, 1914, Jahrgang 61, No. 12, Seite 667, Abstract: *Zentralblatt fur Gynakologie*, No. 10, 1914.

Lawrence, J. Stuart—Extraperitoneal Cesarean Section, *Surg. Gyn. and Obstet.*, March, 1915, vol. xx, No. 3, p. 354.

Mack, Alonzo E.—Report of a Case of Cesarean Section after Death of the Mother, *Jour. A. M. A.*, Aug. 28, 1915, vol. lxx, No. 9, p. 794.

Mandl, L.—Cesarean Section, *Jour. A. M. A.*, May 6, 1916, vol. lxvi, No. 19, p. 1497. Abstract: *Monatschrift ur Geburtshilfe u. Gyna.*, Berlin, Nov., 1915, vol. xlii, No. 5, pp. 389-476.

Markoe, James W.—A Report of Five Cases of Extraperitoneal Cesarean Section, *Bulletin of Lying-in Hospital, New York City*, June, 1914, vol. ix, No. 4, p. 265.

Polano, Prof. O. Oberarzt—Weitere Erfahrungen mit der Sectio Casarea cervicalis posterior, *Munchener Med. Wochenschrift*, April 14, 1914, Jahrgang 61, No. 15, Seite 818.

Smith, Dr. A. Tennyson—A Case of Rupture Through the Scar of a Previous Cesarean Section. *Lancet*, August 22, 1914, vol. ii, p. 506.

Stevens, T. G.—Three Cases of Cesarean Section, *Lancet*, February 28, 1914, vol. i, p. 609.

Swale, C. M.—Cesarean Section, *Jour. of Iowa State Med. Society*, Sept. 15, 1914, vol. iv, No. 3, p. 232.

Webster, J. Clarence—A Series of Abdominal Cesarean Section Performed Under Local Anæsthesia, *Surg. Gyn. and Obstet.*, Feb., 1915, vol. xx, No. 2, p. 221.

Wallich, V.—Discussion sur La Césarienne a La Societe Obstetricale de France, *Annals de Gyn. and D'Obstet.*, Nov., 1909, vol. vi, p. 708.

Barries, J. D.—Under Special Anæsthesia in Treatment of Pregnancy Complicated by Morbus Cordis, *Lancet*, March 28, 1914, vol. i, p. 893.

Zarate, E.—Tardy Cesarean Section, *Jour. A. M. A.*, Feb. 27, 1915, vol. lxiv, No. 9, p. 781. Abstract: *Archives Men's D'Obstet. et de Gyn.*, Paris, Aug., vol. iii, No. 8, pp. 49-96, last indexed, Sept., vol. xii, p. 975.

TREATMENT OF TUBERCULOUS CERVICAL ADENITIS*

GEORGE DECKER, M.D., F.A.C.S., Davenport

The distribution of the lymph glands in the neck depends upon the general plan of lymph drainage of the head and neck, the glands being in the nature of filters set in the pathway of the lymph channels. The course of the lymph flow of the head and neck is downward into the larger vessels which finally terminate in the subclavian veins, pouring the lymph into the blood stream just before it enters the right heart.

The so-called pericervical chain of glands comprises the submental, the submaxillary, the parotid, the mastoid and the occipital glands. Each gland group receives afferent vessels from definite areas corresponding pretty closely to the location of the glands. The occipital and mastoid

*Read before the Sixty-sixth Annual Session, Iowa State Medical Society, May 9, 10, 11, 1917, Des Moines.

glands receive afferent vessels from the scalp and auricle and hence are rarely tuberculous, while those receiving drainage from the mouth, nose and throat are most commonly infected. The great intake routes of the body for air, food and water are the natural and logical places for infections to begin and here the guardian lymph structures abound.

The efferent channels carrying lymph away from the pericervical chain of glands lead into a descending chain on each side of the neck. They follow and are grouped about the internal jugular vein under the sterno-mastoid muscle. Each chain is divided according to its relation to the internal jugular into anterior and posterior groups and each of these into upper and lower groups according to their position relative to the omohyoid muscle. Thus there are four groups of glands, of which the upper anterior group lying in front of the jugular and above the omohyoid is the most important. This group receives lymph drainage from the submental and submaxillary glands, as well as direct drainage from the tonsil and wall of the nasopharynx. There is, however, a close and intimate connection between the various gland groups of the descending chain, through lymph vessels running between them, and hence infection is rarely limited to any one group of glands.

The avenue of entrance of the tubercle bacillus into the cervical lymph glands is through the mucosa of the nose, mouth or naso-pharynx. This entrance of the bacillus may be through diseased or injured portions of the membrane about decaying teeth, chronically inflamed tonsils, adenoids, turbinated bodies and middle ear or, as Adami and others have held, through the apparently intact mucosa of any of these parts. The pharyngeal mucosa is richly studded with lymphoid masses and bodies, in addition to the faucial lingual and pharyngeal tonsils, and it has been shown that these lymph bodies drain directly into the upper anterior group of glands in the neck.

The lymph gland is composed of a mass of lymphoid tissue, so-called, made up of small mononuclear cells enclosed in a fibrous capsule from which trabeculae extend into the gland substance. The gland is generally flattened and somewhat kidney-shaped, the afferent vessels entering at the convex border and the efferent vessels leaving at the hilum.

Tuberculous infection of a lymph gland induces a marked hyperplasia and infiltration of the lymphoid cells, causing enlargement of the gland. Further progress of the infection brings about caseation of the interior of the gland and in the event of mixed infection, active suppuration re-

sults. A mild chronic tuberculous process in lymph glands may result in a moderate enlargement of the glands which are then hard and fibrous but not having much tendency to caseate.

Many tuberculous glands tend to undergo spontaneous resolution and there can be no doubt that vast numbers of people have recovered from tuberculous lymphadenitis in whom the disease was never recognized. Enlarged cervical glands are so common in children as to make this very probable.

The treatment of tuberculous glands of the neck must take into consideration first of all the treatment of the patient himself. Let me explain this by saying that it profits the patient but little to have some tuberculous glands removed from his neck if he is likewise infected in his lungs, larynx or urinary tract. Tuberculosis of lymph glands is almost absolute evidence of tuberculosis elsewhere in the body, either in the afferent drainage area leading to the glands or in the efferent region into which the current leads after leaving the infected glands. Remembering the course of the lymph stream as it pours into the subclavian veins, thence through the heart and into the great capillary system of the lungs, it is fair to assume that most patients with tuberculous cervical glands will sooner or later show tuberculous lesions in the lungs and bronchial lymph glands. The question of whether the non-surgical or the surgical treatment of tuberculous cervical adenitis in a given case is best may be determined partly by a careful survey of the patient's condition and by a review of the results hitherto obtained by the two methods. If we grant that many tuberculous glands have recovered spontaneously without being recognized and without resulting in tuberculosis elsewhere in the body, the glands thus serving the purpose for which they were developed in the body, we must admit that theoretically, at least, many mild cases with a few moderately enlarged glands will be best treated by general measures tending to conserve and augment the natural resistance of the body. But an enlarged superficial gland in the neck offers a tempting mark for surgical enterprise which a less accessible gland in the chest or mesentery does not. If definite lesions in the lungs, larynx, bones, or other parts of the body are co-existent with the cervical glands, it would seem to need no argument that general treatment is indicated. All of us have seen enlarged cervical glands disappear during proper sanatorium treatment for tuberculosis of the lungs. Only when the cervical adenitis is the principal feature of the disease and tends to show marked progression, should surgical treatment be urged.

When caseation or softening from mixed infection has taken place and is shown by attachment of the overlying skin and by other recognized physical and clinical signs, removal of the glands should be undertaken in order that rupture of the infectious material into surrounding structures may be prevented. The mere opening and curetting of the softened gland is hardly enough, though many persons are seen with scars which have resulted from the spontaneous rupture of old tuberculous glands followed by resolution and cure. Radical removal of the gland or the whole gland group is by far the best method of treating these cases.

Study of the literature on cervical adenitis reveals the fact that many, perhaps the majority of authors, incline to favor the surgical treatment of tuberculous glands of the neck. The statistics of results, however, suggest the idea that much depends upon the operator since the percentage of cured cases varies from 15 per cent. to 75 per cent. Dowd, in Bryant & Buck's System of Surgery, quotes the following statistical figures:

Regarding the immediate operative mortality, many reports indicate it as less than 1 per cent.

Regarding later results—

Fischer reported 1,273 cases studied after operation—57.6 per cent. were reported cured; 28.8 per cent. had local recurrence; 13.5 per cent. were dead (tuberculosis).

Jordan in von Bergmann's System of Surgery—of 328 cases operated upon, 82 were followed more than six years; 73 per cent. permanently cured.

Frankel in Billroth's Clinic reported upon 48 of 148 cases; 25 per cent. remained well over three and one-half years; 14 per cent. local recurrence.

Furnrohr in Erlanger's Clinic—87 patients; 41 per cent. permanently cured; 33.5 per cent. local recurrence; 26.5 per cent. dead (tuberculosis).

Blos—745 collected cases; 54 per cent. permanent cures; 28 per cent. recurrences; 18 per cent. deaths.

Dowd—1905; 62 cases over three years; 77 per cent. cured; 12 per cent. recurrences.

Dowd—1909; 96 cases over three years; 93.7 per cent. cures; 5 per cent. recurrences.

The difference in the various percentages reported, reflects the improvement in technique in later years whereby more thorough removal of the diseased glands was made possible. The operation for complete removal of the cervical lymph glands is one which demands no small amount of surgical skill and judgment. Harold J. Stiles of Edinburg spoke of a friend who did his own gastroenterostomies but had Stiles come out to remove tuberculous cervical glands. The glands lying in close proximity to the great vessels, the pneumogastric spinal accessory and other import-

ant nerves, are in a location to make thorough and complete removal a hazardous undertaking. That many operations have stopped short of the deep-lying glands is evidenced by the high percentage of recurrence and one may well doubt the value to the patient of having a few superficial glands removed and equally dangerous deep ones left because of the difficulty of their removal.

Discussion

Dr. J. W. Harrison, Guthrie Center—Dr. Decker just told me that the chairman of the surgical section had been insisting that he send in the abstract of his paper for publication in the April number of the Journal, and after sending in the abstract he wrote his paper, weaving the substance of same around it. Therefore I wish to congratulate him on having such an excellent paper. It covers practically everything and leaves us but little for discussion. The subject is certainly a very important one, as the president has just said. We could discuss it an entire day and get nowhere. In the abstract of paper, I note the recommendation that in mild cases, non-surgical treatment is preferable, especially in early cases. I might take issue with regard to this statement. From statistics that have been gathered I believe we can show that surgical interference will do our patients more good and save a greater number of lives than any other kind of treatment. In listening to Dr. Pottenger's address this afternoon, I soaked in just as much of it as I possibly could, for he is considered authority on this subject. I think the treatment of these cases today depends largely upon the specialty of the physician first consulted. Some men advise hygienic treatment, others light therapy, vaccine therapy, x-ray treatment, sometimes in conjunction with surgical treatment. Some men advise early removal of the lymph nodes, others may advise waiting for abscess formation, then incise and drain, or curette or aspirate, and various other kinds of treatment may be recommended by different physicians. But I take the stand that surgical interference rather than non-surgical treatment is initiative to quick and permanent cure. It is a tender subject perhaps with some of us. I know a member of this Society who himself suffers from this particular condition. He has consulted eminent physicians, even making a trip across the continent to consult our distinguished guest, Dr. Pottenger, and he still has this trouble. He has had the radical treatment in which the entire lymphatic glandular-bearing fascia has been removed and it has left an unsightly scar. I do not know the surgeon who operated, but the results are good on that one side. The other side of the neck is now developing something that is disturbing the patient's rest. Upon being requested to discuss this subject, I sent to the John Crerar Library of Chicago asking them to send me copies of all the literature on this subject which they had received during the past ten or fifteen years. But I was surprised and much disappointed that I was not able to ferret out some

definite or specific treatment for tuberculous cervical adenitis. I really think that in tuberculous cervical adenitis of children where the lymphatic nodes are involved in the upper set of the deep cervical, we might say that it would be wise to remove the tonsils, adenoid tissue and lymph structure, then wait a while and see if the trouble does not disappear. I speak of this owing to the fact that we may not make a correct diagnosis and have simply a hyperplasia or some mixed infection there instead of the tubercular infection. I wish strongly to advocate the earliest possible complete removal of an isolated glandular focus, both in children and adults.

Dr. C. B. Taylor, What Cheer—Personally I believe that Dr. Harrison is on the wrong foot, and that Dr. Decker in the main is correct when he believes that the beginning stages of tuberculous cervical adenitis should be treated generally. I do not believe that they should ever be operated in the beginning stage. Some time ago we operated, as you know, all our cases of tubercular peritonitis, and yet we know that today a large percentage of our tubercular peritonitis cases get along just as well without operation. It is only those cases that continue for a considerable length of time after rational treatment, that need operation. The idea then was to cut off the focus of infection. Now we know that in these cases nature takes care of the condition under general treatment. We used to operate absolutely every time we had tubercular pleurisy, yet Dr. Pottenger told us today what we have learned—that in most cases of tubercular pleurisy we no longer operate; that if we have a tubercular pleurisy without too excessive an amount of effusion, in most instances there would be no necessity whatever for operation. Ten or fifteen years ago, when at the surgical centers we noted that about one-third of the operations were for cervical adenitis, with complete excision; we saw beautiful operations in the neck and went home intending to carry out the procedure in appropriate cases, but we do not see that any more. In the last three years that I have attended the surgical clinics at the Clinical Congress, I do not believe that I have seen a single case of cervical adenitis operated, although surgeons can do it just as well now as they could ten or fifteen years ago. The real upshot of the matter is that if these cases are treated on general principles as we would treat any other type of slowly developing infection, we will cure practically all of them. The proposition advanced by Dr. Decker that in a large number of cases of cervical adenitis would clear up in sanitarium treatment, is what we find in our private practice. I still believe that if we take early cases, and those are the ones we should take—we should not have any late cases—we can cure practically all of them under conservative methods.

Dr. Daniel Glomset, Des Moines—I want to call attention to the fact that it is fairly well agreed among pathologists today that tuberculous cervical adenitis is a metastatic process. And I think my

observations will agree with those of most men who are doing post-mortem work, that the lesion is primary in the lungs and extends from the lungs into the bronchial nodes and then up to the cervical lymph nodes. I am aware of the fact that some American observers report primary tuberculosis of the tonsils. They have not proven beyond dispute that it is ever primary in the tonsils. In the future perhaps they will, but from the experience of Dr. Gohn and others, as well as from my own, it appears that the initial lesion is in the lung. Assuming this to be the case, then, removal of a lymph node in tuberculous cervical adenitis is not justified any more than would be the removal of enlarged nodes in a general syphilitic infection. It is a metastatic process, and I see no sense whatever in removing a lymph node unless complications are present.

Dr. F. M. Pottenger, Monrovia, Cal.—This is a question of great importance. Personally, I believe in and practice the conservative treatment of tuberculous lymph glands. It has not been my custom to remove them. Tuberculosis enters the lymph glands, and while it produces an infection, it also creates an immunity. There is no place in the body where the infection can be better held in check than in the lymph glands. In the last fourteen years I have had only two cases of tuberculosis of the lymph glands operated upon. My practice, however, has not included many of the poor children in the cities. It is possible that there the pathological conditions would have to be treated somewhat differently; but where people can be given the benefit of hygienic life and proper food and aid, the removal of glands will rarely be necessary. It is extremely tempting to remove a large tuberculous gland, but one should remember that the mediastinal glands are very often enlarged and we do not remove them. It seems to me far better practice to endeavor to heal the lesion while it is confined to the glands, where conditions for quieting the infection are ideal, rather than to undertake to remove it; by the time the patient is cured, a high degree of immunity should be attained. In the fall of 1915 I had the honor of being on the program of the Southwestern Medical Society with Dr. John B. Murphy. At that time he told me that he had opposed the operating of tuberculous lymph glands during the preceding twelve years. He further said that tuberculosis is a constitutional disease and that a constitutional treatment was the one that he pursued. In his treatment he always combined tuberculin with other hygienic measures. Not only is it necessary to take into account the desirability or undesirability of surgical operation upon lymph glands; but the mutilating effect must also be considered. A short time ago I was consulted by a wealthy Southern woman, who came to me with large cervical glands. She had already been operated on three times. The first physician to whom she went gave her correct advice. He told her that she should consider the activity in the cervical glands as meaning active tuberculosis, and to

take the same line of treatment for that that she would for tuberculosis of the lungs; but not liking the idea, she went to other physicians who suggested that they should be removed. The result was that after three serious operations, she now has a scar five or six inches long running from the angle of her jaw down to the clavicle; and aside from this, has active tuberculous glands remaining and an infection in both lungs. It is not necessarily due to bad surgery that the infection persists; but oftentimes it is impossible to remove all of the foci of infection. The essayist stated that as a rule no trouble follows these operations. I have seen military tuberculosis started up on several occasions following operations on infected lymphatic glands. The curettement of tuberculous tissue is dangerous. From my study as well as my experience, I will say under all circumstances if possible employ conservative measures and treat the patient constitutionally. If the disease is among the poor children, if possible such children should be put in an institution and given proper care. They should be given all the benefit of the various tonic measures that we know to reinforce their resisting power and in this way check the spread of the disease. If this is impossible, I suppose we will have to continue operating on some of these glands as a measure of second choice.

Dr. Frederick H. Lamb, Davenport—It seems to me that there is a practical point about this question that has not yet been brought out. Tuberculous glands do not come to the physician diagnosed as such. The patient comes with an enlarged gland, or with a series of enlarged glands, in the neck, and the question is: What is the condition of these glands? Are they tuberculous? If once the diagnosis is made there is then time enough to think about the treatment. But I do not see how the diagnosis is going to be made absolutely, in a great many cases at least, without taking out a gland. How is one to know whether the condition is lympho-sarcoma, Hodgkin's disease, a cyst, or what? The patient complains simply of enlargement in the neck, and what is the pathology? I would like to ask the essayist what he thinks about the removal of a gland for diagnostic purposes.

Dr. Decker—I wrote the abstract of the paper at the request of Dr. Rowan and then had to make the paper fit the abstract. Later, in a review of the literature, I found that much that had been written was contrary to my own ideas, and then I incorporated the results of some of the clinics and tried to make my own remarks fit. I am glad that those taking part in the discussion have urged conservative treatment of these glands. Necessarily I was unable to take up the matter of diagnosis or to touch upon the details of treatment to any extent because the general subject was treatment. I can hardly believe yet, in spite of the statistics, that the current of infection is upward from the thorax to the cervical glands. It seems to me that that is the wrong way around. I believe this: that if the same money

be expended in general treatment of these cases as would be paid to a surgeon for operation plus the hospital bills, the patient will do a lot better than with operation.

WHAT IS THE SIGNIFICANCE OF THE DIASTOLIC BLOOD-PRESSURE?*

G. E. CRAWFORD, M.D., Cedar Rapids

Our knowledge of the diastolic pressure up to the present time is much in the same condition as was our knowledge of the systolic pressure previous to the publication of Dr. Fisher's statistics of the Northwestern Insurance Co. a few years ago. Previous to this we knew from clinical study and observation, that high blood-pressure was a serious disease, and tended to shorten life; but just the degree of mortality it produced was not definitely known until the tabulated experience of some of the great insurance companies was published.

The early work of blood-pressure was confined very largely to the systolic reading. The difficulty of taking the diastolic pressure and the uncertainty of the readings under the old methods, made this almost a necessity. Even now when the auscultatory method makes the taking of the diastolic pressure as easy and certain as that of the systolic, the rank and file of the profession are very slow in acquiring the technique.

However, during all this time a number of leading clinicians constantly emphasized the fact that the diastolic and pulse-pressure were as important as the systolic, and that a real knowledge of the condition of the circulation is impossible without all three pressures being known and compared; and this is now universally accepted.

A brief reference to the fundamentals of the blood-pressure by way of introduction, may not be out of place here.

The human heart is a double force pump connected with a double set of closed elastic tubes, each set divided by an intervening mesh of minute vessels, the capillaries, which pervade all the tissues of the body on the one hand, and the lungs on the other, forming the connection with the general venous tree, which gathers up and returns the blood to the heart.

The fluid blood in these closed tubes is subject to the general laws of hydrostatics.

The left ventricle at each systole discharge into the aorta about six ounces of blood, and the right heart sends approximately the same amount to the lungs. The force thus exerted by the left

*Read before the Medical Section of the American Life Convention at Richmond, Va., March 29, 1918.

ventricle at each systole in a mature healthy man, at rest, is equal to raising a column of mercury 125 m.m. in height. This force is transmitted to the column of blood, which being incompressible, is pushed onward into the capillaries. But in order to make room for this sudden increment to the blood volume, the elastic walls of the arteries are made to expand by the sudden impulse of hydrostatic pressure.

The rebound of the aortic wall closes the semi-lunar valves, and this potential energy—somewhat diminished by further oozing away into capillaries, remains in the arteries, to be overcome by the next systolic impulse. This is the diastolic pressure, or the pressure remaining in the arteries during the heart's rest; and represents the resistance to be overcome by the succeeding systole, before the blood column can be carried forward. The force exerted by the ventricular contraction in excess of this resistance is termed the pulse-pressure, or pressure pulse. This in health, is equal to one-half the diastolic when at rest, and is susceptible to large increase for sudden emergencies by the rising of the systolic.

The important requisition of a normal blood-pressure, like that of all the vital functions of the body, is equilibrium—proper balance.

All these vital functions are normally carried on within narrow limits of variation, with ample provision for emergency demands.

The normal pulse rate of a healthy man is 70 per minute at rest; it may rise to double this rate in a 100 yard dash, which occupies but ten seconds of time. The balance of all the functions are probably affected by this sudden change. The promptness with which the return to the normal, or equilibrium, is restored, is an index of the health of the individual; or the delay in the return of this equilibrium may also be the measure of disease.

The normal relation of the blood-pressure as popularized by Faught, and generally accepted, is in the ratio of 1, 2, 3; i. e., that the pulse-pressure represents one-third of the heart force, the diastolic two-thirds, and the systolic representing the full strength of the ventricular contraction.

The statistics of several of the large insurance companies show the average systolic blood-pressure of all the insured of all ages to be 125 m.m. hg.; the average age of the insured being about thirty-five years. So uniform is this result that we are warranted in assuming that the ordinary systolic pressure of a mature healthy man is 125 m.m. and that this has very little variation

in health, excepting the transitory variations of exercise.

This conclusion is corroborated by the consensus of many independent observers.

A further analysis of these statistics show that there is a tendency to slight increase in the blood-pressure with the advance of age, amounting to about 1 m.m. for each three years up to fifty years of age; and 1 m.m. for each two years from fifty to sixty years. This increase, if not strictly normal, is so constant that we may regard it as representing what we may term, the physiological increase of age.

These figures for the five decennial periods are as follows, for the systolic; and applying the rule of 1, 2, 3, for the corresponding diastolic, we have at the age of twenty, systolic 120, diastolic 80, pulse-pressure 40; at 30, systolic 123, diastolic 82, pulse-pressure 41; at 40, systolic 126, diastolic 84, pulse-pressure 42; at 50, systolic 130, diastolic 87, pulse-pressure 43; at 60, systolic 135, diastolic 90, pulse-pressure 45 m.m. hg.

To the best of our present knowledge these figures represent the normal average blood-pressure at these various ages. Everything above this is probably in some degree pathological.

The statistics of the Medico Actuarial Committee show that every millimeter in excess of the normal will add at least one per cent. to the mortality; and with a rapidly increasing ratio as the pressure increases. Just how much additional can be assumed will have to be decided by further experience. As a tentative working rule, a number of companies allow an increase of 12 m.m. to these systolic averages.

All of these figures are based on the systolic pressure alone. So far as I know we have as yet no statistics on the diastolic pressure. Our knowledge is based on clinical experience, observation and analogy. We have spoken of equilibrium as the essential of a normal circulation; and the ratio of 1, 2, 3, as its index. If the insurable limit of the systolic pressure in a man of 60 is 135 m.m. hg. plus 12 m.m. or 147 m.m., the corresponding diastolic would be 98 m.m. with a pulse-pressure of 49 m.m. in order to preserve the equilibrium. So we may assume that 98 m.m. is the insurable limit of diastolic pressure in a man of 60. But it is a matter of common observation that a large majority of cases with a diastolic pressure of 98 m.m. have a systolic pressure considerably higher than 147 m.m., which leads us to believe that a diastolic pressure of 98 m.m. is much more indicative of pathologic changes than a systolic pressure of 147 m.m. There is a strong probability in the latter case

that the person has had a higher systolic pressure, which has begun to recede, showing a beginning heart weakness.

This is the view we have of blood-pressure from the statistical side, and as such we have every reason to believe it is essentially correct.

A thousand men of a given age, will show an average blood-pressure of a certain definite figure.

From the clinical side we get another viewpoint of blood-pressure. Instead of this constant definite condition of general averages, when we examine a thousand individuals we find an ever varying condition influenced within certain limits by exertion, emotion, and various contingencies incidental to both health and disease, which have to be taken into account. The condition and the relations of the blood-pressure, are as varying as is the pulse rate, or the ever dissimilar facial lineaments of as many individuals.

While it may be that the pulse rate of an individual is not exactly the same in any two consecutive hours of the day, yet we have what we regard as the normal pulse rate; and so we have what we regard as a normal blood-pressure, under normal conditions—at rest.

As already expressed, and which I now wish to reiterate and emphasize, is the fact that the most important characteristic of normal blood-pressure is proper balance, or equilibrium. So important is this element that it makes high pressure or low pressure in a measure relative terms, especially as to the relation of the different pressures.

This brings us squarely to the consideration of the original question, "What is the significance of the diastolic pressure?"

In the first place the diastolic pressure represents the resistance in the arteries which the heart must first overcome in order to carry on the circulation. This resistance is made up of several elements: the potential energy transmitted to the artery by the previous systole; the friction of the arterial walls, and especially that due to the multiple subdivision of the arteries; the viscosity of the blood; and the tonicity or contractility of the vessel walls and capillaries.

All of these elements are of a very constant and unchanging character, excepting perhaps the last, rendering the diastolic pressure much more stable or unvarying than the systolic. The systolic pressure like the pulse rate, is constantly influenced by many incidental things—as exercise, emotions, etc., while the diastolic is but slightly affected in this way. Hence, the diastolic is a more definite index of the real condition than the systolic.

From a sincere personal study of the blood-pressure for a number of years, and still more from a careful comparison of the work of others, I have formulated the following deductions concerning the significance of the diastolic pressure.

A high systolic pressure, with a normal or slightly raised diastolic pressure, indicates ordinarily a functional condition, usually a toxemia; and improvement and possible cure, might reasonably be expected with proper treatment.

It is probable that with the exception of such conditions as primary disease of the kidneys, and certain brain tumors, etc., high blood-pressure is always functional at its beginning. But we should not lose sight of the very important fact, that high blood-pressure, while beginning as an effect of a functional cause, if continued will in turn become itself a cause, and degenerative disease of the cardio-vascular-renal system is certain to result.

As Faught has so well said years ago, "Every case of persistent high blood-pressure is potentially if not actually, a case of myocardial disease."

A high systolic pressure, and a correspondingly high diastolic, giving a normal or somewhat increased pulse pressure, indicates a normal balance, and a compensatory condition still present.

A persistently high diastolic pressure is indicative that organic changes have taken place; and we may not expect recovery or much improvement in the condition. A judicious effort to maintain the equilibrium is usually the best that can be done; and in this way some of these cases will live for a number of years in comparative comfort.

A diastolic pressure above 90 is always suspicious; and should be carefully investigated.

A diastolic pressure of 100 is, I believe, always pathological and never returns to normal, except it may be in a case of acute nephritis which recovers.

A high diastolic pressure with a comparatively low systolic, giving a diminished pulse pressure, is usually indicative of a failing heart.

A majority of these cases have had a high systolic pressure, probably reaching over a period of years, until myocardial degeneration has been the inevitable result; and the heart no longer able to produce the force necessary to keep up the equilibrium, heart failure is beginning to manifest itself, which sooner or later must result in decompensation, and death.

In high blood-pressure, it seems necessary in order to preserve the balance, that the pulse-pressure be considerably increased. This of course is

due to the large increase in the systolic pressure. As long as the equilibrium is kept up in this way, the person may go on for some time in apparently robust health, before the day of reckoning appears, but as soon as the pulse-pressure begins to fall below the necessary ratio, dyspnea will be experienced, and then the usual steps of decompensation will soon follow.

The pulse-pressure is of the greatest importance in estimating the cardiacmuscular efficiency.

When the diastolic pressure is raised by exercise more than the systolic, and the pulse-pressure is diminished, there is a broken compensation.

In general, a small pulse-pressure suggests a weak heart.

A low systolic pressure, and a correspondingly low diastolic, giving a comparatively large pulse-pressure, usually indicates large dilated vessels, and a strong heart, having little resistance to overcome.

A very low diastolic pressure is suggestive of aortic regurgitation.

There is a condition of very high blood-pressure, i. e., a high diastolic, and a greatly increased systolic, giving a pulse-pressure as large or larger than the diastolic, which is not well understood, or has not been satisfactorily explained,—a diastolic pressure of 110 or 120 m.m. and a systolic of 240 to 260 m.m. hg.

Some of these cases get on quite well for a good while if they escape the constant danger of apoplexy; but the heart is immensely overworking itself, and must necessarily give out within a limited time.

A case at point is a man of 70, who is under my care, who has had a blood-pressure of 110 to 120 diastolic, and 240 to 250 systolic for the past four years, and how much longer is not known, who is working all the time as a dentist. More than thirty-five years ago he was treated for heart trouble by a competent physician, and was an invalid for several months. For several years past he has had at times some dizziness, and pressure symptoms, and occasionally suggestions of angina—and on two or three occasions, quite severe attacks; but otherwise is in good health, and he says he can do as much work as he ever could.

Various explanations have been suggested for this excessive high pressure. It cannot be accounted for on the grounds of resistance alone. In a case where the diastolic pressure is 110 or 120 m.m., it does not appear why in order to overcome this resistance and carry on the circulation the heart should expend more than twice

that amount of power. It is certainly an excessively abnormal expenditure of energy, and the heart is greatly overworking.

We know something of the very important role played by the internal secretions in controlling or disturbing these vital functions.

We have some knowledge of the very intricate correlation of the cerebral vaso-motor centers, with the pituitary, adreno-thyroid, and cardiovascular systems, which normally maintains the equilibrium of metabolism, and all these vital functions; and that they are liable to disturbances from various causes, frequently a hyperactivity of one or more of these internal secretions.

Schlayer has advanced the theory that this excessive hypertension is due to a condition in which the arterial system has become sensitized to epinephrin. Additional weight has been given to this theory by Sergeant and Cottintot who in a number of cases have succeeded in reducing the pressure 40 to 50 m.m. hg. by irradiation of the adrenals.

Suffice it to say, that high blood-pressure is a very complex entity, necessarily so from the very intricate mechanism it disturbs; and its causes various, but primarily and essentially a toxemia.

There is one point in regard to the diastolic pressure of considerable importance, which has not yet been definitely settled. A large majority of those whom we regard as authorities on the subject, among them Korotkoff, the discoverer of the auscultatory method, regard the point of last sound, or end of the fourth phase, as indicating the diastolic pressure; while a very respectable minority regard the sudden change from clear to dull tone, or the beginning of the fourth phase, as the proper diastolic pressure. There is a difference of from 2 to 8 m.m. usually between these two points, an average perhaps of about 4 m.m.

In cases of normal and high blood-pressure, where the pulse is distinct, the fourth phase is usually short and definite. In low blood-pressure with a feeble obscure pulse, the fourth phase is frequently considerably lengthened.

For practical purposes at least, much may be said in favor of the end of the fourth phase. It is easier to be certain when all sound ceases, than when the tone changes. Besides there are cases where there is practically no tone change; nothing to indicate the different phases, which are so well marked in most cases; but the cessation of sound can always be noted. On the other hand there are cases where an obscure sound is heard far down the scale, making a very low diastolic at the last sound. Probably the best that can be done in these cases is to note both the change of tone and

the last sound, and make some compromise between them.

SOME DETAILS IN ABDOMINAL SURGERY*

A. J. FARNHAM, M.D., Traer

This paper is presented not because it contains anything strange or startling but to call to mind some of the technical details occasionally used together with some application of modern theories of etiology in abdominal surgical lesions, and finally to provoke criticism and discussion, if possible, that the writer may be the better enabled to settle some of these questions in his every day work. Let us briefly consider:

1. Rectus incisions.
2. Abdominal secondary infections.

Rectus Incisions—For various reasons it has doubtless fallen to the lot of us all who do abdominal surgery to open an abdomen which has previously been opened at the same site. Upon opening the rectus sheath, how often has it disclosed a thinned-out appearance of the muscle, looking more like a platysma—in other words the muscle is atrophic. This is usually only seen in the upper portion after incisions for gall-bladder work. It can only be due to one thing, namely, destruction of the nerves to the part which is atrophied.

The rectus muscle is supplied by branches of the lower intercostal nerves which for the most part, approach the muscle from the side as far down as the level of the umbilicus. The point I wish to make is, that in any case where an incision must pass through the portion of the rectus above the level of the umbilicus, never go around the outer border, and if muscle-splitting is done, the nearer the mesial border the better.

Only a few months ago a patient came into my office complaining of a disagreeable weakness of the abdominal wall following laparotomy about a year previous by a surgeon of considerable experience. At first I thought we had a ventral hernia but soon decided it was due to a complete atrophy of the right rectus muscle. A gutter-like depression occupied the position of this muscle from top to bottom. A scar nine and one-half inches long extended along the outer border of the rectus from the costal margin downward. There could be only one explanation of this complete atrophy of the rectus muscle, viz.: that the operation had destroyed the nerve supply to the mus-

cle by going in along the outer border and retracting the belly of the muscle inward in this portion. This criticism of course does not apply to the portion below the level of the umbilicus.

Abdominal Secondary Infections—To the present decade belongs the classical work done by men who have established the etiology of ulcer, gall-bladder disease and appendicitis upon a comparatively firm basis.

Rosenow was able to induce inflammation of the appendix of rabbits from strains of streptococci isolated from human appendicitis in 68 per cent. of sixty-eight rabbits injected. He was able from bacteria grown from excised ulcers of the stomach and duodenum to induce lesions of the corresponding structures in animals in 74 per cent. of 103 animals injected, and likewise, from the bacteria isolated from inflamed gall-bladders to induce a diseased gall-bladder in 80 per cent. of forty-one animals injected. Thus we have a substantial increase in percentage of the three principle abdominal lesions in which he definitely reproduced the disease in animals, the percentages being—appendicitis sixty-eight, ulcer seventy-four and cholecystitis eighty. In all these the streptococcus stands as the most constant and doubtless the predominating primary bacterial cause.

In glancing at the percentages we at once notice the advancing proportion of cases in which the definite bacterial cause was established, the order being—appendicitis, ulcer, cholecystitis. We also notice that when we recall age as an etiological factor in these diseases, the same order applies to the increasing average age at which the greatest number of each of these diseases respectively occurs. And again Rosenow informs us, as a matter of interest, that the virulence of the bacteria for each of these diseases increases in the same order—that of appendicitis being the least, that of ulcer midway and that of cholecystitis being the most virulent.

The coincidence of finding these bacteria, chiefly the streptococcus group, in these abdominal lesions and in infected areas in the head, has been demonstrated in so many cases and by so many competent observers that it has become more than a coincidence, and our literature for the past three years has been teaming with the "focal infection" idea.

Many authorities have given statistics concerning the frequency of the coexistence of two or more of these abdominal lesions. These are more or less interesting. We are beginning to get statistics regarding the coexistence of these lesions with the focal infections, probably their

*Read before the Austin Flint-Cedar Valley Medical Society, Waverly, November 13, 1917.

casual source. I hope the day will come when reliable detailed statistics will show, not only the coexistence, but the sequence of events in which these infections occur, from early life up to—say the age of fifty.

The timely discovery and eradication of any focal infection before it has caused some serious secondary disease, constitutes one of the truly noble acts of the profession. Rošenow makes the following statement: "The presence of appendicitis and especially ulcer and cholecystitis are to be considered good evidence for the existence of some distant focus of infection." This "distant focus of infection," Billings tells us, is in the great majority of cases found in the head, referring especially to tonsils, teeth and sinuses.

Based on the above statements which have come to be widely accepted, if not almost universally accepted, we wish to bring forward one of the chief points of our paper. Given: a child or young person who has just been operated on for acute appendicitis. It is the first serious surgical disease the patient has ever had. Under these circumstances we believe that as soon as the patient has convalesced sufficiently, the sinuses and teeth should be carefully examined and perhaps x-rayed, adenoids removed, if they are present, and last, but not least, the tonsils should be removed even if they do not show evidence of infection, because infected tonsils do not always show macroscopic evidence. True it is this patient cannot have appendicitis again but these tonsils may contain the bacteria which a little later will develop a selective affinity for the gall-bladder, duodenum, stomach, joints, endocardium, etc. Again given a patient who has a cholecystitis. She is about to submit to a laparotomy for this trouble. Here again we believe that, if at all possible, the eradication of any and all foci of infections in the head, including the removal of the tonsils, whether they appear infected or not, should precede the laparotomy. We admit that the majority of patients cannot be made to understand this, and will not submit to this program, but if it were the universal practice in all institutions, we should see fewer recurrences of gall-stones, more cholecystostomies and fewer cholecystectomies, more complete and rapid convalescence.

Here I wish to briefly report a case which perhaps is unusual in regard to age, but in other ways is typical of this class of cases.

Miss M. I., age eighteen, came to me in March, 1913. At the age of twelve she had had an attack of appendicitis lasting two weeks and soreness in the right side of the abdomen ever since. At the age of

fifteen she began to have pain in the right knee. At no time had there been tenderness, swelling or stiffness of the knee—probably a reflex pain. At that time I removed seven small mulberry gall-stones and drained the gall-bladder. The appendix was also removed, there were adhesions about the appendix and caput coli. The gall-bladder drained freely and closed about the eighteenth day. For about three months she felt well, at the end of that time she began to have a recurrence of symptoms. Three years later she came to me again with the symptoms above referred to, and in addition she had been having trouble with her tonsils for about a year. During this interval of three years she had been taking medicine for her trouble and had also spent a month in a hospital with a weight extension on her leg for the trouble in the knee. At this time (March, 1916). I enucleated the tonsils and seven months later did a cholecystectomy. This time there were three gall-stones of the same type as before. Since then she has had good health. There has been considerable weakness and coldness in the right knee, leg and ankle since the extension was taken off, which we believe would not be there had the extension not been used. Some one has said that reflex pain from gall-stones may occur anywhere between the right shoulder and the right knee, and possibly this was one of these cases. Incidentally this patient also had a herpes zoster.

In the matter of ulcer, the same principles should be followed out as in cholecystitis before any direct treatment, medical or surgical, is undertaken. The question of medical or surgical treatment is not within the scope of this paper.

SURGEON GENERAL BRAISTED RE-APPOINTED

Secretary Daniels, announcing that the president has sent to the senate the reappointment of Rear Admiral William C. Braisted as Surgeon General of the Navy, states that Surgeon General Braisted is so efficient and capable, and the Bureau of Medicine and Surgery under his direction has made such an excellent record under the conditions imposed by the war, that his reappointment will meet with general approval. Secretary Daniels also points out the large growth in the personnel of the Navy Medical Department, the attendant increase in equipment, and the fact that the health of the Navy is reported as unusually satisfactory and has shown a marked improvement in the past month. "Surgeon General Braisted," he says, "keeps in daily touch with sanitary and health conditions ashore and afloat, and the gratifying experience of the Navy as to the health of its personnel is largely due to his foresight and leadership, combined with the complete cooperation of all in the medical corps."

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa

Publication Committee

D. S. FAIRCHILD.....Clinton, Iowa
W. L. BIERRING.....Des Moines, Iowa
C. P. HOWARD.....Iowa City, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa
T. E. POWERS.....Clarinda, Iowa
W. B. SMALL.....Waterloo, Iowa

SUBSCRIPTION \$2.00 PER YEAR

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII June 15, 1918 No. 6

FORT DODGE SESSION OF THE IOWA STATE MEDICAL SOCIETY

Each passing year shows new interests in the meeting of the organized profession of the state and additional reasons for such conferences. Since Dr. Sanford's earnest appeal to the medical profession of Iowa in 1849 to meet in Burlington in May 19, 1850, to organize for mutual improvement and for the consideration of questions of public health and welfare, there has been no loss of interest on the part of the profession in public welfare. It was in this same year—1850—in May, June and July, that a "visitation of Providence" came upon the people of the Mississippi Valley, especially reaching Burlington on the night of the 4th of July. Dr. D. L. McGugin says: "It is not our purpose to write an extended article upon this terrible pestilence, which in the wisdom of Providence has again visited us." There were forty cases of cholera with twenty-five deaths in Keokuk and between 400 and 500 cases in Burlington, with from 80 to 100 deaths in a population of 5,000. Dr. McGugin said that in his opinion "calomel was the sheet anchor; not given as a specific, but as a remedy, which more frequently than any other, would excite the secretion of the liver, diminish the congestion of the viscera, determine the circulation to the surface and extremities, and thus cure the patient." The high ideals of the founders of this society were expressed in the following preamble; "For the purpose of harmonizing the profession of medicine and of promoting its use-

fulness and respectability, the undersigned practitioners of medicine in the State of Iowa, to adopt the following constitution to-wit." Again in the first Rule of Ethics; "It is the duty of every medical practitioner to treat his patients with steadiness, tenderness and humanity, and to make due allowance for that mental weakness which usually accompanies bodily disease. Secrecy and delicacy should be strictly observed in all cases in which they may seem to be particularly required."

Sixty-eight years have passed since the gathering of this group of Iowa's notable men to set forth the principles on which the practice of medicine was to rest in our state. Many things have happened since then. No more shall we read of cholera prostrating 10 per cent. of the inhabitants of Burlington or Keokuk as a "dispensation of Providence" whatever else may happen to these cities; and yet had it not been for medical organization and the cultivation of medical science, these experiences might have been repeated again and again.

The immense gains made in our knowledge of disease and our ability to protect the public by which the experiences in the Mississippi Valley in 1850 can never be repeated, we find that our problems are not at an end, and again in 1918 there are many more questions to be worked out. We listened with close attention and great interest to the papers of Major Miller and Major Glomset on types of pneumonia prevailing in military camps and in civil communities with which we are almost as helpless to deal with as was Dr. McGugin in treating cholera. What will the editor of this Journal say in the year 1986? Will pneumonia be as harmless in Iowa then as cholera is now? Why may it not be so if our medical organizations continue their great work? We read the words of our original organizers with great respect and admiration touching our relations to one another and our relations to the public. While our gains in this respect are not so great, they are worth thinking about. Consider our health laws and our medical practice acts. Before 1880 we had no public health laws; they are now not the best, and are far behind the advance of medical science but great good has been accomplished, more probably, than we have sometimes been willing to admit.

Touching upon the harmonizing of the profession of medicine, and of promoting the usefulness and respectability, much might be said, but the large attendance, the general good feeling, and the business character of our meetings should be an answer to our critics. We are doubtless

much behind the ideal. We are in the midst of a great catastrophe when our duty to humanity and to our country should obliterate all else; to us more than any other class falls the privilege of saving the world from a great disaster. With the gathering of millions of soldiers under conditions which existed in 1850, what a havoc of disease and death; think of tetanus, gas gangrene, typhoid and other like diseases; the loss and suffering would be beyond our power to estimate, but with our knowledge, without trained men to apply this knowledge, the disaster could not be much less. Those who listened to the most eloquent and impressive address of Major Jump must have felt where his plain duty lay, and many a loyal heart beat faster and the spirit in him arose to the sacrifice as the great opportunity for the trained physician passed before him; never in a lifetime will the duty to mankind and country be more plainly evident. It was fortunate that Dr. Schooler in a carefully prepared address could present the conditions under which the services of the medical officer be rendered with the best results to the country. A host of medical officers could avail but little unless coordinated and controlled. This fact is well known to the high medical officers of the Army. But there is the laymen in high place both in executive and legislative control who see but dimly the necessity of medical authority, and much otherwise efficient service will be lost. There is a group of men like Dr. Schooler whose age will not permit active service, who can watch and work in the field of increased efficiency with great advantage to the younger medical officer in the field, and to the country which is watching anxiously the welfare of the soldier who is making the supreme sacrifice.

VOLUNTEER MEDICAL SERVICE CORPS

The time has come when the government should know exactly what its medical assets are and the medical profession should be classified with that in view. There is a class of medical men who are under fifty-five years of age and physically able for general medical service. There is also a class of medical men over fifty-five years who should be classified for limited service. There is also a class under fifty-five, who are physically unfit for general service but are fit for a limited service. The first class, or those fit for general service, should be classified for call on the basis of dependency or on the ground of service to industry essential to government welfare, of teachers in medical colleges.

The last two sub-divisions should not be exempted if their places can be filled by older or less physically able. It is to be said that the medical schools generally have sent all the teachers who can be spared without seriously crippling the teaching force. There are very few in public service who cannot give place to men physically unfit for the Medical Reserve Corps.

There are many who are physically fit, who would be of little service in the army, but useful at home. It is to be hoped for the good name of each individual doctor, and for the credit of the profession, that he place his services at the disposal of the government, and that every doctor more than fifty-five years of age, will make application for enlistment in the Volunteer Medical Service Corps. Application may be made to Dr. Franklin Martin of Chicago, or to Dr. W. W. Pearson, Des Moines. Blanks will be furnished on which the doctor may indicate what kind of service he is able and willing to perform. The women doctors have done themselves great credit. More than 2,000 have made application in the Volunteer Reserve.

There is one thing we may be sure of, and that is that the government will not permit the soldiers to suffer from lack of medical service. Iowa as a state, has not done her full duty in furnishing medical men. Some cities have a proud record in furnishing medical officers; others have not. We fear that the government is preparing to call out the number needed. The conscripted doctor will not have much to be proud of in the years to come, and the stay at home doctor who is willing to permit his more patriotic neighbor to serve for him, will have less to boast of. We know of men who are professing to offer their services in such impressive ways that the government could not possibly accept them.

Then let every medical man under fifty-five, enjoying good health, enlist in the Medical Reserve Corps, and every medical man over fifty-five enlist in the Volunteer Medical Service Corps, and answer to their names when the government calls.

Rules of Organization

I. *Name*—The name of the organization shall be the Volunteer Medical Service Corps of the United States.

II. *Object*—1. The object of the Corps shall be to establish an emergency medical organization to perform, when required, such civic and military duties as are not provided for.

2. Services of members will be called for and rendered in response to requests to a Central Governing Board from the Surgeon General of

the Army, the Surgeon General of the Navy, the Surgeon General of the Public Health Service, the General Medical Board of the Council of National Defense, or from other duly authorized departments or associations.

III. *The Corps*—The Corps shall consist of all members of the organization. The general management of the Corps shall be vested in a Central Governing Board.

IV. *Central Governing Board*—The Central Governing Board shall be a committee of the General Medical Board, Council of National Defense.

V. *Officers*—The officers of the Corps shall be a president, a vice-president, and a secretary, and shall be appointed from among the members of the Central Governing Board. These officers shall constitute the executive committee of the Central Governing Board, and shall direct the activities of the Corps.

VI. *State Governing Board*—1. The State Governing Boards shall consist of the members of the State Committees, Medical Section Council of National Defense. The State Committees shall select, subject to the approval of the Central Governing Board, five of their members who are eligible for election in this corps, to act as the executive committee of the Volunteer Medical Service Corps in the respective states.

2. The duties of the executive committee of the State Governing Board shall be to consider applications for membership in the Corps from the respective states and to submit recommendations regarding these applications to the Central Governing Board.

3. The State Governing Board shall aid in the work of the executive committee and perform such other duties as may hereafter be deemed essential by the Central Governing Board to accomplish the purpose for which the Corps was created.

VII. *Membership*—1. Such physicians shall be eligible for membership in this Corps as would be accepted in the Medical Reserve Corps were it not for—

- (A) Physical disability.
- (B) Over age (55).
- (C) Essential institutional need.
- (D) Essential public need.
- (E) Dependents.

2. Women physicians are eligible.

3. Application for membership in the Volunteer Medical Service Corps shall be made upon blanks furnished for that purpose by the Central Governing Board. The completed form shall be returned to the Central Governing Board for

proper classification according to training and special fitness.

VIII. *Method of Election*—1. The members of the Corps shall be graduates in medicine who are licensed to practice medicine in their respective states, who have made application for membership, who meet the qualification requirements that are now or shall from time to time be established by the Central Governing Board, and who shall be elected to membership by the Central Governing Board.

2. Each physician elected to membership in the Corps shall be designated as a member of the Volunteer Medical Service Corps.

3. It shall be the duty of each member of the Volunteer Medical Service Corps to notify the Central Governing Board when eligibility to the Corps ceases to exist.

IX. *Insignia*—1. Members of the Corps shall be authorized and encouraged to wear the insignia of the Corps.

2. The insignia may be secured by members of the Corps under such regulations as may be determined upon by the Central Governing Board.

3. The insignia shall not be loaned to any person not a member of the Corps, nor shall it be worn after notification that eligibility to the Volunteer Medical Service Corps has ceased to exist.

X. Any member of the Corps may be expelled for conduct which, in the opinion of the Central Governing Board, is derogatory to the dignity of the Corps or inconsistent with its purposes.

XI. *Authorization*—The organization and insignia have been authorized by the Council of National Defense.

The following constitutes the central governing board which has been created for the organization by the general medical board: Dr. Edward P. Davis, of Philadelphia, president; Dr. Henry H. Sherk, Pasadena, vice-president; Dr. John D. McLean, of Washington, acting secretary; Dr. Edward H. Bradford, of Boston; Dr. Truman W. Brophy of Chicago; Dr. Duncan Eve, Sr., of Nashville; Dr. William Duffield Robinson, of Philadelphia; Dr. George David Stewart, of New York; Dr. Franklin H. Martin, of Chicago, and Dr. F. F. Simpson, of Pittsburgh, ex-officio.

Dr. Theodore Toepel of Atlanta, Georgia, in Georgia Medical Association Journal, gives an account of a condition described as "Tender Heel," a condition we have often seen among railroad men, due in most cases to trauma. Dr. Toepel speaks of the condition as a bursitis excited by muscular action

or trauma, or a periostitis or an exostosis of small size. There are numerous causes which may excite this pathologic condition, running, jumping, friction from shoes, long marches. Sometimes a gonorrheal infection will stand as a cause of inflammation of the tissues. The condition is often a disabling one and needs a careful consideration and its cause inquired into if relief is to be obtained. An x-ray examination will probably reveal the exostosis if it exists.

LOCAL BOARDS OF HEALTH

Violation—Penalty

Section 2575-a6—Any person who shall move, or any physician or any member of a local board of health who shall cause or assist any person known to be infected or sick with small-pox, or any contagious disease dangerous to the public health to be removed from one city, town or township, to another city, town or township, contrary to the provisions of this act or any regulation of the state board of health, shall be guilty of a misdemeanor, and be punished by a fine not exceeding one hundred dollars or imprisonment not exceeding thirty days, or both at the discretion of the court.

Report of Cases by Number—Duty of Physician

Section 2575-a6b—From and after the first day of January, A. D., nineteen hundred fourteen, it shall be the duty of every physician and surgeon practicing within the State of Iowa, to report to the local board of health, within twenty-four hours, every case of syphilis or gonorrhea coming to his knowledge, and shall make and preserve a record of every case so reported, numbering each case consecutively. He shall require the person to state whether or not he has been previously reported to a local board of health in this state and if so, when, where, by whom, and under what number. The report shall state the sex of the person and the age as nearly as practicable, together with the character of the disease and probable source of infection, and whether previously reported or not, and if so, when, where, by whom, and under what number, but shall not disclose the name of the infected person.

Failure to Report—Penalty

Section 2575-a6c—Any physician or surgeon who shall be called upon to treat professionally any one afflicted with syphilis or gonorrhea who shall fail to report the same to the local board of health within twenty-four hours, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding one hundred dollars or imprisonment in the county jail not more than thirty days. And in addition thereto, the state board of health may revoke his license or certificate to practice medicine, surgery and obstetrics in the State of Iowa.

Physician to Report Whooping Cough, Etc.

Section 2571-1a—The physician attending cases of whooping cough, measles, mumps or chicken-pox shall be required to report the same to the local board of health. In case there is no attending physician, it shall be the duty of the parents or guardian or school teacher to report same to the local board of health. (Supplemental Supp. to Code.)

Deaths—Duty of Undertaker and Physician— Certificates of Death

Section 2. Chapter 326, Laws 37th G. A.—Makes it the duty of the attending physician in all cases to furnish the undertaker or person in charge of the funeral of any person dying in the State of Iowa information as to the cause of death of such person.

Certificate of Birth

Section 6, of the same Act—In case of birth requires the physician to make out a certificate of birth in the standard form adopted by the United States Census Bureau, and file the same with the clerk of the District Court in the county where the child is born within ten days after birth.

Penalties—Duty of County Attorney

Section 12, of the same Act—Makes failure to prepare and file such certificate a misdemeanor, with a penalty of not less than five dollars nor more than one hundred dollars, or imprisonment not more than thirty days, or both at the discretion of the court.

CITY ORDINANCES

Report of Physician

Section 634—No order for the release of quarantine shall be made by the mayor, except upon a report from the attending physician, stating the number of persons on the quarantined premises, sick with the infectious disease in question, their name, age, and when the disease first appeared in each case, when recovered, and the means, if any, used for disinfection. If the mayor shall find that the regulations of the state board of health respecting quarantine and disinfection have been complied with, the quarantine shall be forthwith released. If quarantine regulations have been complied with, and proper disinfection has not been done, the mayor shall order it done under the supervision of the health officer, or some other competent person, and the quarantine shall be continued until it is done. (Ord. 1008, Par. 10; Rev. Ord. 1900, p. 382.)

Duty to Report Disease

Section 697—It shall be the duty of every physician in the City of Des Moines to report in writing to the health department within twenty-four (24) hours after the disease is recognized, on forms to be provided by said health office, the name, age, sex, color, occupation and address of every person under his care in said city, who in his opinion, is afflicted with pulmonary or other communicable form of tuberculosis. It shall be the duty also of the officer

having charge for the time being of each and every hospital, dispensary, asylum, or other similar public or private institution in said city to report in like manner the name, age, sex, color, occupation and last address of every person who is in his care or who has come under his observation within one week of such time who, in his opinion, is afflicted with pulmonary or other communicable form of tuberculosis or with typhoid fever. (Ord. 2046, Par. 1.)

Notice of Death or Removal

Sec. 699—That in case of death from pulmonary or other communicable form of tuberculosis, or the removal from any apartment or premises of a person or persons so afflicted, it shall be the duty of the attending physician, if he has such knowledge, or, if there be no such physician or if such physician be absent, of the occupant or other person in charge of said apartment or premises to notify the health department in writing of such death or removal within twenty-four hours. (Ord. 2046, Par. 3.)

Report of Recovery

Section 701—That upon the recovery of any person who has been found to be suffering from tuberculosis or typhoid, a report to that effect to the health department made by the attending physician, shall be recorded in the register aforesaid, and shall relieve said person from further liability to any requirements imposed by this ordinance. (Ord. 2046, Par. 5.)

Penalty

Section 703—Any person, firm or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not less than five (\$5.00) dollars nor more than one hundred (\$100.00) dollars and stand committed for a period of not less than one day nor more than thirty (30) days in the city jail. (Ord. 2046, Par. 7.)

WOMEN IN THE VOUNTEER MEDICAL RESERVE CORPS

The Medical Board of the Council for National Defense states that women as well as men are expected to offer their services for the new volunteer medical reserve corps now being formed. Nearly 2,000, or about one-third of the total number of medical women of the country, have already registered in the organization known as the American Women's Hospitals. Over fifty women physicians have already gone to France to work among the civilian refugees. The first work of the volunteer medical corps will be substituting for physicians called into war service and caring for the health of workers in supply and munition factories in the United States. They are likely also to be called upon for special work as bacteriologists, pathologists, radiologists, anesthetists, etc.

WOMEN BACTERIOLOGISTS WANTED IN THE CANTONMENTS

It is announced that the army needs the services of 100 women bacteriologists to take the place of men in cantonment laboratories in this country. A practical knowledge of clinical pathology and laboratory diagnosis is required for the work. The salary is \$720 with maintenance, and \$1,200 without maintenance, transportation furnished by the government. Applications should be made to the office of the Surgeon General of the Army at Washington.

CANADA'S CONTRIBUTION TO HER SOLDIER'S WELFARE

The West Virginia Medical Journal tells us how Canada takes care of soldiers' children. We have come to have a great respect for our northern neighbor and it will be some time in the future at least before we extend a benevolent invitation to become a part of us. We are beginning to feel that Canada can get along very well without our immediate help.

How Canada provides for the wives and children of her enlisted men is described in a report by Mr. S. Herbert Wolfe of New York, prepared at the request of the Secretary of Labor and just published by the Children's Bureau of the United States Department of Labor.

In presenting the report, Miss Lathrop, Chief of the Children's Bureau, says:

"In the fifty years since the Civil War, legislation affecting the family and its economic status has shown marked growth. Mothers' pension laws and minimum wage laws are recognized examples, and it is acknowledged that their result has not been to pauperize but distinctly to improve the power of the family to protect itself. In view of this tendency it is to be expected that a system of compensation for soldiers and sailors can be developed whereby the government will make possible for their children the home life and parental care which are the common need of every child.

"The report points out that in Canada two notable elements have been added to the government provision for soldiers and their families: First, insurance on the lives of soldiers is carried by various municipalities, and, second, the Dominion has undertaken as a part of its military system the reeducation, in a suitable occupation, of the disabled soldier so that he can assume again, in whole or in part, the care of his family.

The Canadian compensation for the soldier and his family includes not only \$33 of monthly pay for the private in active service, but a separation allowance to his dependents of \$20 a month from the Dominion government and further assistance in special cases from the Canadian Patriotic Fund."

WAR MEDALS AWARDED BY THE SOCIAL SERVICE INSTITUTE

Gold medals have been awarded by the National Institute of Social Sciences to Dr. William J. Mayo, of Rochester, Minn.; Henry P. Davidson, chairman of the War Council of the American Red Cross Society, and Herbert C. Hoover, United States Food Administrator, in recognition of their humanitarian work. Presentation medals for valuable service in their fields of work were awarded to Francis G. Benedict, Sc.D.; Leo S. Rowe, LL.D.; John A. Kingsbury, formerly commissioner of charities of New York; Dr. Thomas W. Salmon and Professor C. E. Winslow. Professor Irving Fisher of Yale University, presented the medals.—(New York Medical Journal.)

IOWA MEDICAL MEN IN THE WAR

To Army Medical School for instructions, Lieuts. Cecil C. Bowie, Dedham; Frank A. Will, Des Moines.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. Theodore A. Willis, Iowa City.

To Camp Colt, Gettysburg, Pa., for duty, from Fort Logan H. Roots, Lieut. Orson A. Kellogg, Dows.

To Fort Benjamin Harrison, Ind., for duty, Lieut. Frank A. Hubbard, Columbus Junction.

To Fort Riley as instructor, from Boston, Capt. Edwin E. Hobby, Iowa City. For instruction, Lieuts. Lewis A. Hopkins, Grinnell; Clarence McC. Wray, Iowa Falls; Fred C. Smith, Keokuk; from Fort Des Moines, Capt. Thomas E. McCaughan, Ireton.

To Fox Hills, N. Y.; for duty, from Camp Grant, Capt. Elmer J. Lambert, Ottumwa.

To New Orleans, La.; Charity Hospital, for instruction, and on completion to his proper station, from Camp Travis, Lieut. Henry E. Kleinberg, Redfield.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Wadsworth, Lieut. Meredith B. Murray, Macedonia.

Honorably discharged, Capt. Raymond N. Jackson, Fort Des Moines.

The following order has been revoked: To Army Medical School for instruction, Lieut. Cecil C. Bowie, Dedham.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Upton, Lieut. William Harris, Moravia.

To Camp Crane, Allentown, Pa., base hospital, Capt. Andrew H. Woods, Cedar Rapids.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Joseph E. Johnston, Lieut. Snyder D. Maiden, Council Bluffs.

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Lewis, Capt. Marcus C. Terry, Jr., Brighton.

To Camp Sheridan, Montgomery, Ala., for duty, from San Antonio, Capt. Donald McElderry, Ottumwa.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp Cody, Deming, N. M., base hospital, Lieut. Gus B. Young, Des Moines.

To Fort Oglethorpe for instruction, from New York City, Lieut. Elmer P. Weih, Clinton.

To Pittsburgh, Pa., Carnegie bldg., for instruction, and on completion to Camp Lee, Petersburg, Va., base hospital, Lieut. Edward F. Beeh, Fort Dodge.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Bowie, Fort Worth, Texas, base hospital, from Fort Riley, Capt. Prince E. Sawyer, Sioux City.

To Camp Lewis, American Lake, Wash., for duty, Capt. George A. Spaulding, Avoca. Base hospital, from Camp Cody, Lieut. Dan W. Shine, Oelwein.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Bowie, Lieut. Frank A. Priessman, Mechanicsville.

To Fort Logan, Colo.; for temporary duty, and on completion to his proper station, from Fort Omaha, Lieut. Joseph W. Tyrrell, Des Moines.

To Fort Riley for instruction, Capt. John C. Denison, Bellevue; James E. McDonald, Mason City; Lieuts. Ralph F. Luse, Low Moor; Shirley D. Folso, Muscatine; Frederick W. Slobe, Orange City.

To Jefferson Barracks, Mo., for temporary duty, Lieut. Robert C. Molison, Marshalltown; from Fort Oglethorpe, Capt. Charles B. Taylor, What Cheer; from Fort Riley, Capt. Albin B. Phillips, Clear Lake.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieuts. Ben T. Whitaker, Boone; Carl Kail, Stratford.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. John E. Morgan, Oskaloosa; Carl Aschenbrenner, Pella.

To Topeka, Kans. State Board of Health, as epidemiologist from Fort Riley, Lieut. Charles D. Shelton, Bloomfield.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. Charles D. Busby, Brooklyn; George J. Wenzlick, Iowa City.

The following order has been revoked; to Fort Riley for instruction, Lieut. Clarence McC. Wray, Iowa Falls.

Lieutenant Harry R. Reynolds, one of the instructors at Fort Riley, has been made a captain.

Supplement to list of Iowa physicians who have been recommended by the Surgeon-General for commissions in the Medical Officers' Reserve Corps.

Emil Otto Ficke, Capt., Davenport.

Bernard Joseph Callahan, Capt., Des Moines.

Oliver Thaddeus Clark, 1st Lieut., Keokuk.

Ralph Frank Luse, 1st Lieut., Low Moor.

Josiah Ralph McKirahan, Capt., Perry.

Arthur James Ross, Jr., 1st Lieut., Perry.
 John Israel Marker, 1st Lieut., Centerville.
 John Thomas Hanna, 1st Lieut., Kellogg.
 Malcolm Samuel Campbell, 1st Lieut., Malvern.
 Dean Hill Osborn, 1st Lieut., Monticello.
 James Apperson Hull, Capt., Ottumwa.

BOOK REVIEWS

TUMORS OF THE NERVOUS ACUSTICUS AND THE SYNDROME OF THE CEREBELLOPONTILE ANGLE

By Harvey Cushing, M.D., Professor of Surgery at Harvard University. Octavo of 296 Pages with 262 Illustrations. W. B. Saunders Company, 1917. Philadelphia and London. Cloth \$5.00 Net.

It is well known that the author of this book before leaving Johns Hopkins, devoted his great learning and energies to neurological surgery. Dr. Cushing became convinced that one of the causes of the comparative failure of the surgery of brain tumors was the divided responsibility of the neurologist and surgeon, and that when the surgeon became a neurologist, as well as surgeon, a different series of results would follow. It is not too much to say that the history of brain surgery has changed since Harvey Cushing took up his epoch making work. The author did not mean that the cooperation of the neurologist was not important but that the surgeon should add a thorough knowledge of neurology as a part of his equipment. In 1911 Dr. Cushing gave to the profession his work on "The Pituitary Body" which was a contribution to knowledge on this subject. We now entertain the same feeling toward his second contribution to an even more difficult subject. This work is based on two series of patients, one of which he designates the "Baltimore" series from January, 1902 to August, 1912, which includes 337 patients with a diagnosis of brain tumor and the "Boston" series observed from September, 1912 to February, 1914, including 447 patients with a diagnosis of brain tumor verified in 273 or 61 per cent. of the cases. Taken together, 784 patients verified either at operation or at autopsy in 468 cases. This is the basis on which the author presents his observations on Tumors of the Nervous Acusticus. These tumors are classified on the basis of location and on histological findings. After classifying all these brain tumors, the series of 784 tumors, the lesion was verified in 468 instances; 134 were lesions in the posterior fossa, involving the mid and hind brain; 56 were extracerebellar tumors and 30 of the latter were lesions from the Nervous Acusticus or at least six per cent. of all tumors.

The thirty verified acusticus tumors are given in case reports. Three additional unverified acusticus are given in case histories. A chapter is given on etiology and incidence, a chapter on symptomatology. Included in the chapter on Diagnosis, three cases are presented which presented symptoms sim-

ulating acusticus tumors, but on operation it was found that the symptoms were due to other conditions. The entire chapter on diagnosis is a masterful exposition of scientific methods of inquiry. Chapter ten is devoted to the operative treatment of acusticus tumors. After pointing out that the earlier historic operations were made through small cranial openings, Dr. Cushing sets forth the method employed in his own clinic by which freer access is gained and a somewhat improved technic employed. Dr. Cushing gives the case mortality in his work as 20.7 per cent. and the operation mortality as 15.4 per cent. The author anticipates a lower mortality in the future.

THE THIRD GREAT PLAGUE

A Discussion of Syphilis for Everyday People by John H. Stokes, A.B., M.D., Chief of the Section of Dermatology and Syphilology, The Mayo Foundation Clinic, Rochester, Minnesota; Assistant Professor of Medicine, The Mayo Foundation Graduate School of the University of Minnesota. W. B. Saunders Company, 1917. Cloth, \$1.50 Net.

This attractive book of 200 pages, presents the third great plague, syphilis, in a manner to produce great good to the world not only through the medical profession but through a better understanding on the part of the more intelligent general public. We are introduced to the subject by an eloquent preface which should be read as the first chapter in a propaganda for the prevention and cure of syphilis. Through the work of Schaudinn, Wassermann, Neisser, Bruck, Ehrlich, Hata, Roux, and Metchnikoff, we have a definite knowledge of what syphilis is, how it can be prevented and cured, and how through the medical profession and the intelligent laymen we can confer the greatest blessing upon the human race. We read of the loss of life and the maiming of men in the war that is raging in Europe in which all the world is engaged, and think almost nothing of the war raged by the invisible germ of syphilis upon the human race, producing more wrecks even than the war with the open enemy that is engaging all our thoughts and energies. But few realize the intense watchfulness of the officers, medical and line, in preventing and curing soldiers who are exposing themselves to the dangers of syphilis, even greater than the enemy's shells and bullets. This watchfulness unfortunately cannot reach the home communities which are in greater danger from syphilis than the soldiers in the camps and at the front. Dr. Stokes has rendered a great service in preparing a book which can be read by the intelligent public in an understanding way. It is the duty of the medical profession so far as possible, to put the understanding public in the way of reading this book and co-operating with them in putting aside certain foolish notions and unite in a campaign against the secret enemy.

MILITARY ORTHOPEDIC SURGERY

Prepared by the Orthopedic Council, Medical War Manual No. 4. Lea & Febiger, New York and Philadelphia.

This book, like its predecessors in the series, aims to correlate the theoretical portion of orthopedic science with the practical experience gained by the surgeons of the Allies during the war, and to present for our guidance a summary of what must therefore, be the best available methods in this branch of surgery.

A great portion of the work consists of material quoted en masse from the articles by Col. Sir Robert Jones, and Col. Edward L. Munson, U. S. A., has furnished the chapter on prophylaxis of injuries and disturbances of the feet, which latter constitutes the bulk of the first three chapters; then follows discussion of injuries to the joints, with special reference to the knee, with a chapter on Ankylosis of Joints following gun-shot injuries, showing the proper positions to be chosen for such ankylosis, graphically illustrated. A chapter is devoted to the Spine, to methods of treatment for disturbances due to nerve injuries, to ununited and malunited fractures, and to bone grafting.

The closing chapter gives the methods of fixation, by plaster of Paris dressings and by splints, each variety of which is shown.

A supplement at the last is devoted to the report of a Board of Medical Officers in France, describing and giving cuts of those varieties of apparatus shown by actual practice to be of greatest aid and most easily obtainable with directions for their making, their indications and methods of application, with the results obtainable from them.

By the use of this little volume together with the practical demonstrations as carried out in the Medical Officers Training Camps, the American surgeons cannot fail to be well equipped to cope with the immense amount of reconstruction work which lies before them.

Lieut. Harry R. Reynolds, M. R. C.,
M. O. T. C., Ft. Riley, Kans.

THE MEDICAL CLINICS OF NORTH AMERICA

November, 1917. Published by W. B. Saunders Company, Bi-Monthly. Price Per Year \$10.00.

This is a New York number and contains 22 contributions from well known New York physicians. Among the number of able papers is one by Dr. Warren Coleman on Typhoid Diet. On a basis of 1000 calories, a combination diet is formulated, covering the period of the disease and the complications that may arise. To help the busy practitioner, the details are pointed out.

A similar contribution is offered by Max Einhorn on diet in diseases of the kidneys. Another illustrative clinic is by Dr. E. Libman on "Some General Considerations Concerning Affections of the Valves of

the Heart." Dr. Libman draws attention to the difference between anhemolytic infections of rheumatism and influenza and the hemolytic streptococcic infections from focal infections. It appears that the prognosis from anhemolytic infections is better than in the hemolytic forms. The author also points out the liability under favorable conditions of hemolytic streptococcic infection attacking heart valves already damaged by rheumatic or influenza infection. In estimating the future of a heart case, and how much strain it will bear, the nature of the heart infection should be determined.

There are other clinics of equal importance which we have not space to consider.

A PRACTICAL DIETARY COMPUTER

By Amy Elizabeth Pope, Author of Various Books for Nurses. Published by G. P. Putnam. New York and London, Knickerbocker Press. Price \$1.25.

Until quite recently little attention has been given to food computation in this country, attention being centered on cook books for the purpose of palatable dishes. Now we are earnestly inquiring as to the food value of the preparations, both in hospitals and in private practice.

In preparing this book the author has presented the subject in the form of tables for easy reference. In table one is given the number of calories per hour during different conditions, as in sleep, rest, and different degrees of exercise, followed by tables showing normal average height, weight and ages. Later on, tables giving menus for the day and values of the different foods in calories. In different parts of the book, nearly every kind of food used, is measured in calories and computations are made in the combinations generally used to provide the necessary calories for a normal diet under different conditions of rest and exercise. At this time, if not at all times, when economy is essential for all classes of people, the scientific value of food should be considered. Books of this kind should be recommended by the medical profession to hospitals, and to private families for their guidance, they contain information which would be welcome to the lay readers if they were advised of their existence.

A CLINICAL MANUAL OF MENTAL DISEASES

By Francis X. Dercum, M.D., Ph.D., Professor of Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. Second Edition Revised. Octavo of 497 Pages. W. B. Saunders Company, 1917. Cloth \$3.50 Net.

The first chapter is devoted to a historic introduction and to definitions. In chapter second the author at once asserts that: "Pathology has as yet so little to offer that we must content ourselves with a purely clinical interpretation of insanity. This should be the guiding fact to direct the general prac-

itioner in considering insanity. It is a disease manifesting certain symptoms of which he should be the interpreter." As stated in the preface, mental diseases may have their origin in infections and intoxications, others are essentially disorders of metabolism. Others are associated with profound nutritional disturbances which have their origin in defensive reactions of the organism to intoxications, others again to aberrations and arrests of development due to heredity, etc. With this conception of insanity the trained physician is fully competent to determine the questions of management of insane patients as to institutional treatment or home management and should qualify himself to give proper advice. The purpose of the book before us is to present the general practitioner with the clinical facts touching insanity, the clinical types and such clinical data as will enable him to determine the probable cause of certain mental manifestations; if the origin is an infection, toxic or nutritional or developmental. The book is divided into four parts; the first part relates to the grouping in the insane. Five groups are made: first, Delirium, Confusion, Stupor; second, Melancholia, Mania, Circular Insanity; third, The Heboid-paranoid Affections (Dementia Precox Paranoid); fourth, Neurasthenic-neuropathic Disorders; fifth, Dementias. Part second includes clinical forms related to the somatic affections; the infections as syphilis, tuberculosis, malaria pellagra; intoxicants as alcohol, morphinism, cocainism, plumbism, etc.; disorders of metabolism as diabetis, visceral diseases, etc., diseases of the ductless glands, functional and organic diseases of the nervous system; mental diseases related to age, etc. Part third; Psychologic Interpretation of the Symptoms. Part fourth; Treatment. Dr. Dercum's wide experience as a teacher and as a neurologist fits him in a peculiar manner to prepare a book of this kind.

BLOOD TRANSFUSION, HEMORRHAGE AND THE ANEMIAS

By Bertram M. Bernheim, A.B., M.D., F.A.C.S., Instructor in Clinical Surgery, Johns Hopkins University, Captain, Medical Officers Reserve Corps, U. S. A., Author of *Surgery of the Vascular System*, etc. J. B. Lippincott Company, Philadelphia and London. Price \$4.00.

The interest which has developed recently or the revival of interest in blood transfusion, led Dr. Bernheim to present to the profession the assets of this method of treatment. For many years there were theoretical reasons for transfusion of blood and many times it was tried but the difficulty was in devising a technic devoid of accident and danger. Recently or what the author designates the fourth period, or the Period of Anticoagulation or Indirect Transfusion, ingenious workers have formulated a method or technic which can be employed to give transfusion a trial in a class of diseases which the-

oretically it is fitted for. Dr. Crile is credited with the largest contributions to the elaboration to a technic.

The author gives considerable space to well known physiological facts in relation to coagulation of blood; the diagnosis of hemorrhage; the control of hemorrhage and the indication for transfusion, dangers, selection of donor, etc., and methods of transfusion. This section of the book appears to be intended for the use of the senior student and hospital interns. Commencing with chapter nine; the practitioner finds what he is looking for; the employment of transfusion in anemias, anemia from hemorrhagic conditions, primary pernicious anemia. The author points out the disappointing effects of splenectomy in pernicious anemia and the better results from transfusion before splenectomy, even at best too much should not be expected. However, transfusion and splenectomy are justifiable procedures in selected cases.

The author presents a resume of the value of transfusion in hæmophilia, melæmia neonatorum, purpura, and jaundice, giving many instances of gratifying results of this method of treatment.

INFANT FEEDING

By Clifford G. Grulee, A.M., M.D., Assistant Professor of Pediatrics at Rush Medical College; Attending Pediatrician to Presbyterian Hospital, Chicago. Third Edition Thoroughly Revised. Octavo of 326 Pages, Illustrated. W. B. Saunders Company, 1917. Cloth \$3.25 Net.

The importance of work such as is included in this volume is made apparent when the author states that "Approximately one-fourth of all deaths occur in the first year of life, and that of these about 60 per cent. are due to gastrointestinal disturbances." It needs no argument to show to the medical profession that drugs have but little influence in curing these disturbances and that our chief hope lies in proper scientific feeding. The practitioner of today, therefore, is seeking the best information on infant feeding. We all know very well that the question is a chemical and physiological one, associated with questions of absorption and metabolism, and that the foundation must be laid in the laboratory and in a hospital clinic which furnishes a large number of patients, presided over by a physician of special fitness and training. The findings under such conditions can be transferred to our own service, guided by our own discriminating skill. Dr. Grulee is not a stranger to the medical profession, and it is well known that his work meets the conditions above stated. We cannot go into details but merely point out to those of the profession who treat infants, that this book contains scientific information regarding food requirements and metabolism, and proper breast-feeding and artificial feeding.

A MANUAL OF SPLINTS AND APPLIANCES
FOR THE MEDICAL DEPARTMENT OF
THE UNITED STATES ARMY, 1917

Oxford University Press, American Branch,
35-West Thirty-second Street, New York.
Price \$.75.

In accordance with Special Order No. 73, A. F. F., August 20, 1917, the Board of Medical Officers directed to investigate and report upon the advisability of standardizing certain appliances to be employed and issued by the Medical Department of the United States Army, makes the following report:

"This board met as directed and in its report, recommends that in addition to standardizing the manufacture of splints and appliances, a manual describing their proper use be published and distributed to all United States Army medical officers at home and abroad, etc."

This extremely valuable manual published for the use of army medical officers, is now on sale by the Oxford Press as above stated. The manual is of equal value to surgeons doing general accident surgery. There is a cut of the splint or appliances on one page and directions for its use on the opposite page. There are 208 pages and 43 figures, including all forms of splints and appliances used in accident and military surgery.

We most cordially recommend this book, which appears in a most convenient form for medical officers of railway and industrial companies.

CLINICAL LECTURES ON INFANT FEEDING

By Lewis W. Hill, M.D., Children's Hospital, Boston; and Jesse R. Grestley, M.D., Michael Reese Hospital, Chicago. 12 mo. of 377 Pages Illustrated. W. B. Saunders Company, 1917. Cloth \$2.75.

This book consists of two series of lectures given to classes of physicians organized in different towns by two different trained physicians, one representing Boston methods and one representing Chicago methods, and then coordinating the two methods in a single volume, the primary object to be a clinical post-graduate course on infant feeding for physicians without interrupting their daily work. It appears that at the close of the lecture a clinic was provided for the purposes of illustration. The plan appeared to be quite satisfactory. As stated, the lectures were subsequently published and the general profession now has the advantage of them, one following the plan worked out in the Children's Hospital, Boston, and the other worked out in Michael Reese Hospital, Chicago, each varying in character, but having the same end in view, the different forms of disease being considered and the appropriate dietary applied, based on scientific methods of study. The lectures not only consider what is a proper diet for children, but also what a diet should be in different forms of disease.

MATERIA MEDICA, PHARMACOLOGY, THERAPEUTICS AND PRESCRIPTION WRITING FOR STUDENTS AND PRACTITIONERS

By Walter A. Bastedo, Ph.G., M.D., Assistant Professor of Clinical Medicine, Columbia University. Second Edition Reset. Octavo of 654 Pages, Illustrated. W. B. Saunders Company, 1918, Philadelphia and London. Price \$4.00 Net.

Notwithstanding the brilliant and attractive features of surgery and allied branches, there is still a demand for books that point out the use of remedies which if they do not cure, relieve the sick man and help him to get well. The author states that "The objects of the practice of medicine are; to prolong life, to secure comfort, to improve health or to promote recovery." This book appears to be intended for the use of students in medical colleges and is well adapted to this purpose; the text is clear and easy to follow.

The classification of remedies is logical, new remedies are considered when they have proved to be of value. The book is based on scientific methods of practice and will prove of distinct value to the practitioner in seeking means of relief to his patient. The section on prescription writing will be of marked value to the young doctor who in the beginning finds it difficult to select agents for the relief of his patients.

AMERICAN ILLUSTRATED MEDICAL DICTIONARY

A New and Complete Dictionary of Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology and Kindred Branches; With New and Elaborate Tables. Ninth Edition Revised and Enlarged, Edited by W. A. Newman Dorland, M.D. Large Octavo of 1179 Pages with 331 Illustrations, 119 in Color, Containing 2,000 New Terms. W. B. Saunders Company, 1917. Price: Flexible Leather \$5.00 Net; Thumb Index \$5.50 Net.

This excellent and indispensable work again comes to us after a lapse of two years. The rapid advancement of medical science brings new terms and some changes in the use of medical language that requires a new edition about every two years, and the practitioner who desires to keep himself in line with progress must feel the necessity of having the latest editions at his elbow. The merits of this work are too well known to need any commendations at our hands.

During March the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Calco Chemical Company:
Chlorcosane (Calco).

- Gilliland Laboratories:
- Normal Horse Serum.
 - Concentrated and Refined Diphtheria Antotoxin.
 - Concentrated and Refined Diphtheria Antitoxin.
 - Typhoid Vaccine.
 - Small-pox Vaccine.
 - Original Tuberculin, "O. T."
 - Tuberculin Ointment in Capsules (for the Moro Percutaneous Diagnostic Test).
 - Bouillon Filtrate Tuberculin, "B. F."
 - Bouillen Emulsion Tuberculin, "B. E."
 - Tuberculin Residue, "T. R."
 - Tuberculin for the Detre Differential Diagnostic Test.
- Monsanto Chemical Works:
- Dichloramine-T.

At the meeting of the Johnson County Medical Society, held in the Commercial Club, Iowa City, May 1, Dr. E. W. Rockwood said that the views of protein metabolism have been steadily changing since the nature and proportions of amino acids in the protein molecule have been known. Instead of assuming that a definite number of grams of protein is sufficient for a day's dietary, it is now known to be necessary to consider what particular protein is to be used and how far it is adequate for maintenance and growth. For example, Osborne and Mendel have shown that zein, the protein of maize, and gliadin, one of the proteins of wheat, are deficient for these purposes but that the addition of the amino acids, lysine and tryptophane, repairs the deficiencies. So, too, other substances the accessory food substances, or "vitamines," must be present with the nutrients, or growth and health fail. Their composition is unknown though it is known that they occur in milk, butter, yeast, cod liver oil, and other foods. McCollum has isolated two classes, one soluble in water, the other in fats. Investigation in a third line has shown the deficiency of mineral salts in many of our native proteins. As more definite knowledge is gained, the modern dietician must make use of it; the old standards no longer suffice.

Dr. John H. Hamilton and Mr. H. F. Peebles, in a paper on "Newer Methods of Diagnosis in Treatment of Lobar Pneumonia," emphasized the fact that lobar pneumonia is nearly always due to the pneumococcus, while bronchial pneumonia may be due to a considerable number of organisms. The present epidemics of bronchial pneumonia in the military training camps are largely due to hemolytic streptococcus. Since the serum treatment with Type I antipneumococcus serum has greatly reduced the mortality of pneumonia due to the Type I pneumococcus, they urged the advisability of determining the type of pneumococcus in every case of lobar pneumonia, and in case the disease is due to the Type I pneumococcus, that Type I antipneumococcus serum be used.

The patients should first be desensitized. The serum should be injected intravenously; the dosage should be between 80 and 100 c.c. and should be repeated at eight hour intervals until the patient shows marked improvement.

The fact that lobar pneumonia occurs in epidemics is also brought out. Contacts frequently carry the same type of pneumococci as the person with whom they come in contact.

Newer methods of diagnosis were discussed. The mouse inoculation method described by Avery, Chickering, Cole and Douchez was recommended as the most reliable, whereas the cultural method described by Avery is probably the most reliable substitute for the mouse inoculation.

The paper by Dr. J. W. Nuzum, of Chicago, on Infantile Paralysis will be published in the Journal.

OFFICERS IOWA STATE MEDICAL SOCIETY
1918-1919

The officers of the Iowa State Medical Society for 1918-1919 are:

President.....	Max E. Witte, Clarinda
President-Elect.....	Wm. L. Allen, Davenport
First Vice-President.....	Wm. A. Rohlf, Waverly
Second Vice-President.....	Evan S. Evans, Grinnell
Secretary.....	Tom B. Throckmorton, Des Moines
Treasurer.....	Thos. F. Duhigg, Des Moines
Editor.....	David S. Fairchild, Sr., Clinton

COUNCILORS		Term Expires
First District—John R. Walker, Fort Madison.....		1920
Second District—L. W. Littig, Iowa City.....		1922
Third District—W. A. Rohlf, Waverly.....		1921
Fourth District—Paul E. Gardner, Chairman, New Hampton.....		1919
Fifth District—G. E. Crawford, Cedar Rapids.....		1923
Sixth District—O. F. Parish, Grinnell.....		1923
Seventh District—Channing G. Smith, Granger.....		1919
Eighth District—J. F. Aldrich, Shenandoah.....		1919
Ninth District—A. L. Brooks, Audubon.....		1922
Tenth District—W. W. Beam, Rolfe.....		1921
Eleventh District—G. C. Moorehead, Secretary, Ida Grove.....		1920

TRUSTEES		
J. W. Cokenower, Chairman, Des Moines.....		1919
W. B. Small, Waterloo.....		1921
T. E. Powers, Clarinda.....		1920

DELEGATES TO A. M. A.		
W. B. Small, Waterloo.....		1919
M. N. Voldeng, Woodward.....		1920
J. C. Rockafellow, Des Moines.....		1920

ALTERNATE DELEGATES		
Granville N. Ryan, Des Moines.....		1919
B. L. Eiker, Leon.....		1920
J. C. Langdon, Clinton.....		1920

The next meeting of the Iowa State Medical Society will be held at Des Moines, May 7, 8 and 9, 1919.

The minutes of the Sixty-Seventh Annual Session and the transactions of the House of Delegates will be published in the July issue.

SOCIETY PROCEEDINGS

The Allamakee County Medical Society met at Waukon, Tuesday afternoon, June 4, at the court house.

Dr. O. O. Svebakken, Waukon, gave a full report of the State Society meeting held at Fort Dodge. The scientific program was:

Dentition, Primary and Secondary—M. B. Yeoman, D.D.S., Lansing. Discussion opened by J. S. Cameron, D.D.S., Lansing.

Chronic Alveolar Infections, and Their Relation to Health—R. J. Eischeid, M.D., New Albin.

A general discussion followed the presentation of the papers.

The April meeting of the Appanoose County Medical Society was held the 30th at the society assembly room, St. Joseph's Hospital, Centerville. The scientific program was:

Pneumonia—U. L. Hurt.

Systemic Infections from Local Sources—E. T. Printz.

Small-pox—N. W. Labaugh.

Vaginal Hysterectomy—C. S. James. (Illustrated by lantern slides.)

Cherokee County Medical Society met in regular session in the staff room at Cherokee State Hospital, Tuesday evening, April 30.

Dr. P. B. McLaughlin, of Sioux City, presented a splendid paper on Transfusion of Blood and its Indications.

Dr. McLaughlin gave the history indications and technique of this valuable procedure. He explained the classification of donors and reported cases of hemophilia, anemia and shock in which transfusion proved a life saving measure.

Dr. George Koch, of Sioux City, gave a joint paper on Blood Diseases and Anemias. He gave a scientific classification of the diseases of the blood and discussed the etiology of the various forms of pernicious anemia.

Following the spirited discussion of these valuable papers, luncheon was served by members of the hospital staff.

Four new members were voted into the society at this meeting.

The regular meeting of the Dallas Guthrie County Medical Society was held at Panora, April 18, with a large representation of the membership present.

Dr. Granville N. Ryan, of Des Moines, was the guest of the society, and presented a paper on The Medical Treatment of Goiter; and Capt. J. R. McKarahan, of Perry, read a paper on The Diagnosis of Ruptured and Unruptured Ectopic Pregnancy. Both papers were of scientific interest and value.

The Dubuque County Medical Society met April 9 at the Commercial Club, Dubuque. Usual program.

Dr. R. R. Harris, in his paper on "A Summary of the Diseases of the Thyroid" laid particular stress upon the difference between a thyrotoxicosis and hyperthyroidism causing exophthalmic goiter. He also cited some cases showing the interrelationship of the thyroid with other ductless glands.

A lengthy and heated discussion over lodge practice, followed by adverse action, took place.

The legislative committee reported the successful prosecution and conviction of a firm of quacks and the contemplated action in other frauds.

Action relative to the preparation for the Thirtieth Special Program of the society to be given at Dubuque, June 20, was taken. J. W. S.

At a recent meeting of the Fort Madison Medical Society, every member of the society pledged himself to respond to the government call for service.

This society is one of the strongest and most enthusiastic local societies of the state. It was organized thirteen years ago, and now has a membership of thirteen.

Aside from the consideration of professional and scientific subjects, interest in all timely matters is taken. In the last Liberty Loan drive, \$450 was voted for the purchase of bonds, and \$200 had been expended for bonds previously—\$25 was given to the local Red Cross chapter.

The April meeting of the Johnson County Medical Society was held on the third in the south hall of the University Hospital, Iowa City.

In a five minute review, Dr. Wilbur Diven said that only during the past few years has the general practitioner, enlightened by the work of Billings, Rosenow and others, recognized the role of the tonsil in many systemic infections.

By compiling statistics from answers to inquiries sent out to leading laryngologists and internists in regard to the results obtained by tonsillectomy in cases of systemic diseases in which the tonsils seemed the only source of infection, together with the results of similar cases reported in the Johns Hopkins Bulletin he found:

In cases of arthritis—Real cures in 67.8 per cent.; considerable improvement 24.4 per cent.; and no improvement in 7.8 per cent.

In cases of cardiovascular disease—Real cures in 22.8 per cent.; considerable improvement in 50 per cent.; and no improvement in 27.5 per cent.

In cases of renal disease—Real cures in 71.5 per cent.; considerable improvement in 18.7 per cent.; and no improvement in 17.5 per cent. of cases.

He warned against tonsillectomy closely following convalescence from acute purulent infection due to danger of septicemia. He also called attention to the mistaken idea that most general practitioners and many laryngologists have as to the function of the tonsils in childhood—showing that they do not effect the development of the child in the least, nor do they have any effect on dentition as is commonly believed.

Dr. J. T. McClintock, discussing the Respiratory Function of the Blood, called attention to the clinical value which the study of the carbon dioxide content and combining power of the blood has had in relation to suspected cases of acidosis. Attention was also called to the adaptation of the Van Slyke apparatus in determining the oxygen content and capacity of the blood, and its possible clinical value in cases of cardiac compensation and incompensation, as shown recently by Lundsgaard. The speaker pointed out that in the application of the oxygen capacity finding, it was necessary to understand the normal ability of the blood to take up oxygen and how this was controlled.

He stated that normal blood when exposed in the lungs became 94 to 98 per cent. saturated with oxygen, and that with 90 per cent. saturation no oxygen hunger was noticeable, but when the saturation fell below 90 per cent., oxygen hunger would develop. The normal individual breathing air containing 13 per cent. oxygen instead of the normal 20 per cent. would notice no effect because the lower amount of oxygen was still sufficient to maintain alveolar pressure enough to saturate the blood to 90 per cent. of its capacity. While the normal ability of the blood to take up oxygen and disassociate it was due primarily to the hemoglobin, and that while hemoglobin in different animals was almost identical, the ability of the blood to take up oxygen showed a marked difference when the blood of different animals was exposed to various pressures of oxygen. This difference in the blood of different animals as well as the difference in the absorptive and disassociation curve of oxygen for different bloods was shown to be due to the electrolytes which are present in the blood.

The ability of the blood to take up oxygen is decreased by increasing the acidity of the blood and increased in the opposite condition. The manner by which the organism was able to adapt itself in the amount of oxygen taken up under varying conditions such as changes in atmospherical pressure, variations in the oxygen content of the air, and in developing acidosis, is shown to be due in the most part to the controlling of the carbon dioxide pressure in alveolar air, the replacement of carbon dioxide in the blood by other acids and by possible secretory action of alveolar epithelial cells.

Dr. J. G. Mueller, in a paper on infections of the hand, said that prompt treatment of apparently minor infections of the hand would often prevent serious trouble later; that the point of greatest tenderness rather than the point of greatest swelling indicated the proper place for the incision: that incisions must be made sufficiently free, and with due regard to the fascial spaces of Kanavel. When incising a felon, the acute tactile sense of the anterior surface of the distal phalanx of the finger must be preserved by making lateral incisions. Rest and moist warmth are most important factors in preventing the spread of infection: the rest must be ab-

solute, as every movement "pumps up the microbes." Moisture is maintained by means of an impervious outer covering, and warmth best by means of from two to four 120 c. p. electric bulbs in the radio vibrant. With this apparatus a constant warmth of any desired temperature is easily maintained. Passive motion and massage must not be begun until all danger of spreading or of relighting infection is safely passed.

H. A. L.

The Linn County Medical Society met April 9 at Hotel Montrose, Cedar Rapids. The scientific program was:

What is the Significance of the Diastolic Blood Pressure?—G. E. Crawford, M. D. (Read before the Medical Section of the American Life Convention at Richmond, Va., March 27, 1918.)

Pneumonia in Children and Some of its Sequelae—Albert H. Byfield, M.D., Iowa City.

Unusual Complications in Some of the Common Infectious Diseases—Campbell Palmer Howard, M.D., Iowa City.

Classic Surgery of the Head and Neck—Joseph C. Beck, M.D., Chicago.

The pleasing and unusual feature of this meeting which makes it a memorable occasion, was the celebration of the fiftieth anniversary of the active practice, of Dr. George P. Carpenter, in Cedar Rapids.

To have practiced fifty consecutive years in one city, cannot be said of many in any profession; and such an epoch should not be passed unobserved.

Dr. Carpenter's colleagues, by this observance, manifested their high expression of esteem and good will, and it is pleasing to know that the testimony of regard and affection is well merited.

A banquet and informal reception was tendered Dr. Carpenter. In response to the toast, Fifty Years in the Harness and Still on the Job, the guest of honor in his characteristic way related many interesting incidents connected with his practice and experience during the early years in Cedar Rapids.

The members of the Linn County Medical Society as an expression of their appreciation, presented Dr. Carpenter with a gold headed cane.

At a recent meeting of the Palo Alto County Medical Society, held at Emmetsburg, the following resolutions on the death of Dr. J. C. Davies were passed:

"Whereas, The great physician in his infinite wisdom has seen fit to remove from our midst, our beloved friend, citizen and physician, Dr. J. C. Davies of Emmetsburg, Iowa.

"Be it Resolved by the Medical Association of Palo Alto County, Iowa, that we extend to Mrs. J. C. Davies, other relatives and friends our heart-felt sympathy in their sad bereavement.

"It is also Resolved, That the profession has lost a valuable and progressive man, whose death we deplore and whose memory we revere—for his kind words, honest deeds and helpful life will ever abide.

"It is further Resolved, That a copy of these resolutions be sent to the Journal of the Iowa State Medical Society and another copy be spread upon the books of the Association for permanent record.

G. Baldwin,
H. M. Huston,
F. X. Cretzmeyer.
Committee."

June meeting of the Plymouth County Medical Society was held at Kingsley, June 4. The program was:

Phylacogens—C. G. Ellsworth, M.D., Akron.

Anaphylaxis—W. J. Brunner, M.D., Akron.

Treatment of Pneumonia—W. T. Shepard, M.D., Le Mars.

The regular meeting of the Polk County Medical Society was held April 30 at the Chamberlain, Des Moines.

Fractures of the Skull was the subject presented by Dr. J. W. Martin; and Dr. A. P. Stoner read a paper on Choice of Operation in Fractures, reviewing the different operative procedures practiced, and stated that since the advent of the x-ray there had been a growing demand from both the profession and laity for more accurate anatomical approximation as well as good functional results in treatment of fractures. He called attention to the fact that the courts now hold the attending surgeon liable for any deformity following the treatment of fractures.

Until Lane perfected his technic, antisepsis and asepsis had been disappointing in open methods of bone and joint surgery. Under Lane's rigid technic it was possible for Murphy to perfect his reconstructive joint work wherein nails and screws were used so successfully.

The author reviewed the more recent methods of autoplasmic bone surgery of Davison, who uses a section of the entire fibula as an intramedullary splint in fractures of the tibia and femur, and as a bone peg for fractures of the neck of the femur, the periosteum is removed from the graft. He also discussed the intramedullary grafts operations of Magnusen and Høglund both using the bone adjacent to the fracture and passing the graft into the canal to bridge the break, the grafts being fixed with bone-screws.

The author stated that many transverse fractures of the tibia or forearm that have defied reduction by ordinary means are easily reduced and successfully stabilized by the open method. They need only a well fitting plaster cast to complete the treatment. Oblique fractures are not suitable as a rule for bone inlay operations. Dr. Stoner prefers the intramedullary splint of Murphy or Davison. He reported a case of oblique fracture of the femur in a boy of twelve in which the Parham and Martin was used. The x-ray showed perfect approximation and abundance of callus after nine weeks.

Two other cases of ancient fractures were reported in which operation was undertaken to overcome de-

formity and restore function in which the Lane plate was used. He defended the use of metals in suitable cases and declared the plate still is a valuable asset to the surgeon's equipment.

The Story County Medical Society met at Nevada at the office of F. H. Conner, Tuesday evening, May 14, with a good attendance.

H. M. Eisler, of Des Moines, gave a very interesting paper on Indirect Blood Transfusion, and D. M. Ghrist, of Ames, read a paper on The Treatment of Pneumonia. Both papers were of scientific value and fully discussed.

Mary Greeley Hospital, of Ames, extended to the society an invitation to hold its next meeting at the hospital. Upon motion the invitation was accepted.

The subject of paying the State Society dues of the members who have entered the service—there being six from Story county—was considered and laid over until the next meeting for disposal. One new member was received, Charles Hatcher, of Maxwell.
B. H.

The Northwestern Medical Society met at the Myers Hotel, Sheldon, April 24, under the presidency of Dr. A. J. Meyer, of Hawarden.

Following the banquet at 7:30, the scientific program was given as announced.

Etiology, Diagnosis and Treatment of Gastric Ulcer—J. W. Meyers, Sheldon.

Clinical Course and Diagnosis of Duodenal Ulcer—J. W. Cadwallader, Ashton.

Enteritis—R. W. Perkins, Sioux City.

Pathology of the Gall-Bladder and its Surgical Treatment—J. N. Warren, Sioux City.

The membership of this society is from the profession in Sioux, Lyon, Osceola and O'Brien counties. Jay M. Crowley, of Rock Rapids, is the secretary.

DEATHS

William T. Speaker, M.D., aged sixty-seven; Northwestern University Medical School, 1878; Fellow of the American Medical Association; member of the Iowa State and Calhoun County Medical Societies; local surgeon of the Illinois Central railway; a practicing physician at Manson for thirty-one years, died at his home in Manson, May 2 from carcinoma of the viscera.

Frederick Cecil Skinner, M.D., aged forty-five; State University of Iowa College of Homeopathic Medicine, 1898; member of Scott County and Iowa State Medical Societies, a practitioner at LeClaire for twenty years. Dr. Skinner was in New York City taking a special course in diseases of the eye, ear, nose and throat, died in the Post-Graduate Hospital, New York City, May 10, after a surgical operation.

(Continued on Adv. Page xvi)



Sizes 000, 60, 0, 1, 2, 3, 4, 5 and 6.
Plain and Chromic. 60-inch Lengths.

ARMOUR AND COMPANY
CHICAGO

1677

Pituitary Liquid,

Physiologically standardized; free from preservatives. 1cc. and ½cc., boxes of 6.

Corpus Luteum, from true substance.

Powder, 2 and 5 grain Capsules and 2 grain Tablets.

Extract Red Bone Marrow,

Hematogenetic, Histogenetic.

Elixir of Enzymes,

Digestant and vehicle.

Thyroids, Powder,

¼, ½, 1 and 2 grain Tablets.

Full line of organotherapeutic agents. Literature to physicians upon request.



OUR unequaled facilities for the manufacture of Surgical Catgut Ligatures and Sutures will appeal to the surgeon who gives the subject a moment's consideration. From the slaughter of the sheep to the sterilization of the strands, every process is under the care of an Armour man who is an expert at his work. The result: Smooth, strong, supple and thoroughly sterile sutures.

Atophan Adviser

No. 1

Atophan in Gout

Full Information and Clinical Literature from

Schering & Glatz, Inc.
150-152 Maiden Lane, New York

THERE'S justified pride in having introduced into the U. S. A. such a therapeutic product as Atophan. There's even greater pride in being able to offer it "Made in U. S. A."

Atophan therapy in Gout has nothing in common with the old-time "uric-acid-solvent" principle. This fundamentally different drug limits the abnormal accumulation and stimulates the excretion of uric acid.

You cannot keep your Gout patients on colchicum in any form, not even on salicylates, without having to worry about the heart. No need of that with Atophan and more reliable results at that.

Most Gout sufferers can foretell to a nicety the onset of an acute attack. Instructed to keep on hand a supply of Atophan and to take it promptly, they can avert, or at least shorten and palliate, its course.

ATOPHAN Is Furnished in

Tablet, each 7½ grains, twenty in box
Powder, in cartons of one ounce

Up-to-date druggists have it in stock. If yours has not, please let us know

DEATHS

(Continued from Page 232)

Adam Raymond Klein, M.D., aged forty-two; Jefferson Medical College, 1904; a practicing physician at Muscatine, died at his home May 18.

Alden Frances Large, M.D., aged sixty-five; College of Physicians and Surgeons, Keokuk, 1884; a practitioner for many years at Braddyville, Page county, died at his home May 11.

MEDICAL NEWS

Dr. Paul E. Gardner, of New Hampton, is convalescing from a critical illness following an operation.

Dr. Walter Matthey, of Davenport, underwent a serious operation at Augustana Hospital, Chicago, last month from which he is slowly recovering.

Dr. E. B. Walston, of Des Moines, has been critically ill from streptococcus infection.

Dr. Jay M. Crowley, of Rock Rapids, has recovered from an attack of scarlet fever.

Dr. J. F. Auner, of Des Moines, is taking a short post-graduate course at the Vanderbilt Skin Clinics, New York City.

Dr. G. H. Sumner, Des Moines, has been reappointed for a five year term as secretary of the State Board of Health.

Dr. Wm. C. Witte, U. S. P. H. S., has been appointed to act as health officer at Des Moines, temporarily, until a successor to Dr. H. L. Saylor has been secured.

CHANGES OF LOCATION

Dr. J. A. Thomson, of Onawa, has removed to Sioux City, associating himself with Drs. Sibley, Tripp and Earl.

Dr. A. J. Swezey, of Decorah, has removed to Marietta, Ohio.

Dr. G. E. Vermeer, of Sibley, has sold his practice and interest in the Osceola hospital to Dr. F. P. Winkler, of Sibley.

Lieut. C. E. Kellogg, of Shenandoah, who has been in training at Camp Funston, has resigned from the medical reserve corps and will remove to California.

Dr. A. H. Rosburg, of Denison, has sold his practice to Dr. C. B. Tice, of Sioux City. Dr. Rosburg goes to Rochester, Minn., where he has been given a fellowship in surgery in the Mayo Foundation.

In accordance with the wishes of the Surgeon General of the Army, continuous sessions of senior and junior classes of the College of Medicine, State University of Iowa, will be given. The summer session begins Monday, June 17.



The Ideal Bran Food

Thousands of physicians have found in Pettijohn's their ideal of a bran food.

It's a delightful mixture of wheat flakes, oat flakes and bran flakes—each in right proportion.

It is a staple food which people readily continue. The bran is inconspicuous, yet the 25 per cent, mostly in flake form, makes it efficient.

Pettijohn's today is widely accepted as the ideal bran food for continuous use. And we believe you will so regard it.

Pettijohn's

A Flaked Cereal Dainty

55% Wheat Product—20% Oats—25% Bran

Soft, flavory wheat and oats rolled into luscious flakes, hiding 25 per cent of unground bran. A famous breakfast dainty.

Pettijohn's Flour is 75 per cent Government Standard flour mixed with 25 per cent tender bran flakes. To be used like Graham flour in any recipe; but better, because the bran is unground.

The Quaker Oats Company

Chicago

(1919)



DR. LAURA HOUSE BRANSON, Iowa City
PRESIDENT
State Society of Iowa Medical Women
1917-1918

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, JULY 15, 1918

No. 7

SYMPOSIUM ON PEDIATRICS*

LAURA HOUSE BRANSON, B.S., M.S., M.D.,
Iowa City

I. EQUALITY AS A BIRTHRIGHT

It is but a few years—a quarter of a century at most—since pediatrics, the study of diseases incident to infancy and childhood, has enjoyed a distinctive place in clinical medicine. Previous to that time it had been included in the obstetric departments and maternity clinics of our colleges; while in general practice from time immemorial it has been grouped with gynecology, from which it has never been entirely separated.

During the twenty-five years in which pediatrics has maintained a separate existence, it has grown rapidly; its literature, among which that of Von Reuss ranks as a classic, is now voluminous, its divisions and sub-divisions manifold, its devotees legion. In the curricula of medical colleges it is now the rule to list pediatric departments; while in some of our universities there are new-born clinics with pediatricists in charge; Minnesota University being one of the first in which this arrangement was adopted under the supervision of Dr. J. P. Sedgwick, head of the pediatric department. There also have recently been initiated schools for pediatric instruction for the purpose of training teachers in this branch of medicine. Verily the babe is coming into his own—it is but a question of time until his birthright will be assured; we are now realizing that the child is a fact not a theory.

In an afternoon's program it is absolutely impossible to more than touch upon this great and wonderful subject. Under existing circumstances it has become more wonderful—more all-engrossing.

When we read of decreasing birth rates in old and supposedly civilized countries—and all countries are now confronted with a decreasing birth rate in addition to the terrific losses in war—when we read of the slaughter of infants and

children in conquered countries—of the enforced bearing of offspring—of political pregnancies in order that the ravages of war may be compensated for—of the desolate and dying children in the wake of the war, for babes are now being born under conditions that imperil their chances for life, not mentioning their chances for health, for lack of sanitation and shortage of nutritious foods always make for high mortality—when we read of all of these things, we feel our hearts burn within us and we reach out in an intense longing to counteract and to overcome all of these unwarrantable conditions.

We firmly believe in the following statement from the pen of one of our statesmen: "In all this vast and complex activity of war, we must never lose sight of the equally great necessity to protect and to preserve the privileges of womanhood and childhood," for truly war is the tragedy of womanhood and childhood. And we further believe that while we plan for the rehabilitation of countries devastated by this awful war initiated and carried on as it is by scientific barbarians, and therefore the most cruel and savage of all wars, and premeditatedly so—we must also plan for the rehabilitation of manhood, womanhood, and childhood as well, with the one object in view—namely that of moulding it all into a more perfect physical, mental, and moral humanity.

Then when we turn to our own land and consider the ever present conditions surrounding infants and children, we are brought face to face with facts that appall us and we are filled with a desire to furnish permanent relief.

With all this in mind, we meet here today to discuss as conscientiously as possible, this subject, which is of such vital interest to us all; because we realize that upon the proper solution of the child problem depend the strength and the perpetuity of our nation and of all other nations as well.

In introducing this symposium on pediatrics, I have decided to discuss one feature in particular—namely equality as a birthright. We read that all men are created free and equal; from a medi-

*Read at the Twenty-First Annual Meeting of the State Society Iowa Medical Women, May 7, 1918, Fort Dodge, Iowa.

cal viewpoint there never was a greater fallacy. No discussion is needed to prove this assertion; it is self-evident.

If there is not equality at birth, what are the reasons that make for inequality? This opens up a wonderful vista—so vast is this that time permits but a limited survey, a mere touching of the high points.

Parentage plays a great part all along the line: heretofore we have trained for every other avocation, and, true to life, we have neglected to train for the most important vocation of all, that of parenthood. Much time and thought is bestowed upon the proper perpetuation of stock, none at all upon the proper perpetuation of the human race: this, the most important of all, is left to chance, sometimes a lucky chance, more often an unlucky one, judging by results. This study of eugenics has many problems worthy of consideration; for a child, like the City of Rome, is not made in a day. Time, decades of time, are needed.

Diseased conditions of parents may leave their imprint upon their offspring: poorly nourished prospective mothers mean offspring with a tendency to diseases incident upon low vitality; inherited tendencies for deficiency diseases. Venereal diseases of parents wreck their vengeance upon innocent children in a large percentage of cases: thousands of cases of congenital blindness may be traced to the presence of gonorrheal infection in the mother at birth of child. An indescribable heritage this; an inequality that condemns the innocent victim of another's sin to a lifetime of darkness and woe.

SYPHILIS

In these days of scientific medicine when great strides mark medical progress, we have reached the conclusion that there is but one hereditary disease—syphilis. A whole volume could be written about the marks of this dread scourge upon thousands and hundreds of thousands of infants and children; a few facts about the transmission of syphilis from parent to child might not be irrelevant.

Since the discovery of the distinct organism of syphilis, we speak with certainty when we define it as a communicable disease due to a specific organism which may be detected, positively, as a rule, by certain specific tests; this has proven of great value in pediatrics as it has made available an accurate determination of hereditary syphilis in infants which might otherwise remain undetected.

GENERAL TRANSMISSION RULES

If both parents have syphilis, child usually does.

If mother has secondary syphilis child is almost certain to.

If mother has tertiary syphilis, child probably will not.

First born is more likely to have syphilis if infection is prior to birth of all the children.

If mother becomes infected during pregnancy, child may or may not have it.

If infants die during first few weeks of life, no anatomical changes may be found, but the presence of the specific organism furnishes the evidence of its existence. Later, other symptomatology may furnish means for diagnosis; bone changes are the most frequent symptoms with epiphyseal separations and periosteal swellings; involvement of liver; of the organs of special sense leaving a trail of iritis, keratitis, otitis media, pharyngitis, etc.; of the nervous system as evidenced by paralysis, paresis, neuritis; in fact the child is made heir apparent to the innumerable manifestations of this most loathsome disease, a wanton destruction of life; of healthful life with all its privileges.

In addition to all this, there are many premature births and stillbirths at term. Julien in reporting 206 pregnancies in syphilitic women, gives the following data; 36 abortions, 8 stillbirths, early death of 69 infants; mortality 55 per cent. Le Pileur 154 pregnancies; 120 abortions and stillbirths, 26 early deaths, 8 survivals. Moscow Foundling Society reports a mortality of over 70 per cent.

This awful plague has followed the human race from generation to generation, leaving its mark upon body and soul, cheating the child out of its rightful heritage, rendering him unequal when ushered into the world, unequal to those who are born free from this awful scourge.

I have dwelt somewhat at length upon this phase of the subject because in these times of tremendous stress, the question of clean morals has come to each of us more forcibly than ever before, and has made us realize as never before, that greater efforts must be put forth to conquer this insidious foe, which, under the cloak of secrecy, tarnishes our youth and renders them unfit to perform life's highest and noblest duties.

Through the intensive study of pediatrics during the past few years, many interesting and pertinent facts have been brought out which have revolutionized our ideas in regard to pathology at birth; I am speaking now of births in general.

At the University of Minnesota where the new-born clinic has been under the control of the pediatric department for some years, the records show 54 per cent. of pathology, some major, some minor. One-half the children at birth show an inequality when compared with the other 50 per cent.: certainly a most alarming condition in a country like ours, and a most promising field for intensive labor.

RESTORATION OF THE CHILD'S BIRTHRIGHT

In order that the birthright of the child may be restored and properly safeguarded there must be the best possible prenatal care: the slogan "Protect the Mother and Save the Child" is well worthy of attention. There must also be protection and careful education of our youth in order that the proper perpetuation of the race may be assured.

There must be eradication of venereal diseases by the enactment of proper laws and the proper enforcement of such laws. This can be done and it must be done if we are ever to succeed in measuring up to the fullest possible perfection of the human race.

That even more than this can be done has been proven recently by a decision rendered by the court of Delaware*, which held in the charge to the jury that by knowingly infecting his innocent wife with a loathsome venereal disease, a husband was guilty of inflicting upon her physical abuse and injury resulting in great bodily harm. Such a law, such a decision, would protect the mother and save the child. Nothing less drastic will suffice.

I close then by registering a plea for the restoration to the child of his inalienable rights and privileges—thereby furnishing him the necessary protection from avoidable and preventable disease, suffering, and untimely death.

THE DOCTOR IN THE ARMY*

LEWIS SCHOOLER, M.D., Des Moines
Mr. President and Members of the Society:

The contents of the last paper, "Relationship of Respiratory Infection to Digestive Disturbances in Infants and Children," and the discussion upon it, give well the position of the doctor in the Army; namely the inability to enforce suggestions. In his paper Dr. Byfield complains that the parents are largely to blame for the infection of their children because of their failure

to carry out the instructions of the physician. The doctor in the Army occupies pretty nearly the same position in regard to the sanitary and general conditions in the camp. Along those lines the doctor's function is largely suggestive, and the line officers have always been very jealous of the dignity of the profession, and recommendations of the doctor in most important matters may be over-riden by a very insignificant line officer or some one higher up. This has always been the condition in the Army so far as the doctors are concerned. They have not had sufficient authority. It is true that of late the condition has improved somewhat, but it is not improved to the extent that other matters necessary to the conduct of a great war have improved. During previous wars the hospital facilities were crude, and the medical man was handicapped. Today those facilities are commensurate with the duty involved. It is the duty of the medical man in the Army and the Navy to keep the men in fit condition for services upon the field, and in order to do that properly he should have more authority. Now, these conditions would not exist if the doctors themselves had done more towards bettering them. From personal experience, I place this responsibility largely upon the doctors. The doctors do not make the laws. The majority of the Congress of the United States is composed of lawyers who do make the laws, and they have looked out persistently and eternally for the benefit of the legal profession rather than of the medical profession. Our profession now has commissioned in the Army a large number of able bodied young men and some that are older, with the rank of lieutenant, captain or major, and only occasionally one with a rank above that, while in the Judge's Advocate's office the lowest rank is that of a major, and the Judge Advocate's office is absolutely a bullet-proof concern. Nobody ever heard of any one in the Judge Advocate's office getting in range of a gun that had a range less than the 75-mile gun that is now firing upon Paris occasionally. The condition of the medical man in the Army, so far as rank is concerned, can all be bettered if each one of you will write a letter and keep on writing letters if need be, to your congressmen, urging that the dignity of the profession be recognized; that men of distinction now serving in the National Army with the rank of major and some with a rank of captain, be given adequate recognition. This is an injustice that can only be corrected by the united efforts of the profession itself. And this effort must be brought to bear upon the law-makers. You can

*A. M. A. Journal, Vol. lxx, No. 4, p. 1029.
*Address before the Sixty-Seventh Annual Session Iowa State Medical Society, Fort Dodge, May 8-9-10, 1918.

do nothing by bringing it to bear upon the commanders of the Army. The commanders of the Army may set aside all the suggestions and all the efforts made by the medical department. If you will read the report of the investigation that was made at the close of the Spanish-American War as to the conduct of the affairs of the different camps, and particularly at Chickamauga where the conditions were so abominable, you will find that Gen. Brooke, who was the commander of that Army, testified indiscreetly and stupidly we might say, that he cared more for his own opinion in regard to sanitary matters than he did for the advice of all the medical men in that Army. Everybody knows the result, due to the arbitrary management of sanitary affairs by men uneducated and untrained in this special field and many of them absolutely ignorant of sanitary and medical care of the sick. And yet while the committee having the investigation in charge censured the witness for his position in the matter, he could not be brought to account for this condition of affairs.

There is another element entering into this subject that makes the duty of a man in the medical department more onerous at the present time. Recently two doctors have been court-martialed because the friends of two soldiers who had died alleged that the patient in each instance had not been given the proper attention, and that he would not have died had he been given proper treatment, and, at least in one of these cases, if the patient had been kept in the hospital a sufficient length of time. Consider for a moment the ability or the authority of the medical man in the Army to keep a patient in the hospital. There is only one way that he can do it, a plan which I have worked in a number of instances, namely: Upon receiving a communication that a certain patient be allowed to go home, and the doctor knows that this man is not in condition to safely do so, to put that communication in his pocket and not let anybody see it. But, you say, you are then subject to court-martial for violation of the law. However, you can work it occasionally. In instances I know of in which the line officers, the commanding officers of regiments, and even Congress, interfered, patients were taken out of the hospital over the protest of the medical officers and suffered a relapse, and some died before they reached home. In other cases a man would start for home, the hospital authorities would receive a few telegrams from him while on the road saying that he was improving nicely, but almost invariably after the man arrived home and had been fed by sympathizing friends and relatives to the limit, a telegram was received

saying that he had died, all from the doctor keeping him in the hospital too long!

Another difficulty is that an enormous number of reports is required. There is in my mind a method of getting around it, but this method I have not been asked to state and I shall not take up the details of it now. But the issuing of so many reports takes up time, it distracts the attention of the medical man and prevents him doing the best work that he is capable of doing. If this paper work could be eliminated and the medical man could give his attention to treatment and sanitation and to the care of his hospital patients, he would be enabled to do better work and improve all the time. It has been said that no improvement has been made in the Medical Corps in the Army in the different wars. This is a mistake as a matter of course, but that allegation has been made, and it has been set forth as one of the reasons for not giving the medical man more power and authority, for not creating in his behalf greater dignity and higher rank when the matter goes before Congress. Another thing is that several of our surgeon-generals have seemed to think that as long as they were the surgeon-general, that was sufficient honor for the Medical Corps of the U. S. Army. However, the present surgeon-general endorses the Owen-Dyer bill and favors an increase of the rank and dignity of the medical man. If you will all urge your congressmen to support that bill, you will be doing quite a service not only to our fellows in the Army, but to the country at large.

As to whether or not advances have been made by the men in the Army. During the War of the Rebellion, a great advance was made by the medical men of the confederacy. This advance was not brought about by the laboratory, it was not brought about by the microscope, it was not brought about by modern methods of research and study in the fields of pathology and epidemiology, but it was brought about by necessity, by reason of the blockade, which I think is not generally known to the doctors of the United States. At that time all sponging was done by the sea sponge. After a battle, these sponges would be used over and over until they looked and felt more like a lump of mud than a sponge, and their absorptive powers became absolutely nil. But the blockade prevented the surgeons from obtaining any more sea sponges, so they used cotton cloth, and they found that when they washed these cloths and used them for the purpose of sponging wounds, the mortality rate was greatly reduced and that the lessening of suppuration, etc., was markedly enhanced by the abandonment of the sponge, which was of necessity

and not by choice. This is all recorded in a small medical journal that was published for a year and is now in the Surgeon General's office at Washington. This was a discovery of sterilization, it was the beginning of aseptic surgery, but the profession being divided, one camp in the North and the other in the South—not that they were divided in their feelings or intentions or anything of the kind, but by force of circumstances—the publication was limited to such a small number of men, and also because of the stress of the times, meager means of information, etc., it failed to be utilized and to be taken advantage of to any appreciable degree; but it was really the foundation of the discovery of antiseptics in modern surgery. I might cite yellow fever, typhoid, dysentery, chronic diarrhoea and other matters, but time will not permit.

There is another thing, touched upon a moment ago—the lack of authority of even the inspectors to make any recommendations that will meet with approval. There occurred in a regimental camp at Camp Dodge this circumstance: The medical inspector who came around, found some suggestions to be made, he wanted some things altered, so he talked to the colonel, who listened to him impatiently for a while, and finally he said: "Are you through?" The inspector replied, "Yes, I think those are all the suggestions I have to make." "Well," the colonel remarked, "If you don't like the looks of things around here you can go to hell!" That ended the inspection. The inspector could have preferred charges against him, but that is rather a dangerous thing for a medical man to do because the regular army officer knows more about the paper work than anything else, and when you come up with your charge you find the same opposition to the medical department that you find all along the line. Therefore it is dangerous for a doctor to jump into a thing of that kind with men who consider themselves superior and whose authority is recognized to a greater extent than that of the medical man. But the need of doctors in an army is always great. It is stated that at the present time 5,000 more medical men are needed and they want 350 of them from this state and 250 of that number by the first of July. This is a serious draft of itself upon the profession of the state. We have already sent 12 per cent. of the profession, which means a considerably greater percentage of the active members of the profession than the numbers would indicate, because we must take into this count only the men who are eligible and fit for service; you cannot take into the count the women doctors, you cannot take in men over fifty-five years of age, and you cannot

take in the physically unfit for service in the Army. The draft calls for younger men, for active men. And it all comes back to the old axiom, "Old men for advice and young men for war." As to how they are going to take these men is a matter of some concern to the medical department of the Surgeon General's office, but that they are going to take them there can be but little doubt in the minds of any one. We have already sent a large number. There must be somebody left at home, but if the Army is increased to three to five millions of men as recommended by the Secretary of War and proposed by the House and Senate military committees, you can imagine the drain that is going to be made upon the profession.

There are many men who would be willing to go into the Army, they tell me, if they could choose what they would do, if they could choose their rank, choose their station. That has been the difficulty with me in private practice—to choose what I wanted to do, and I think I have done more things I didn't want to do than that I did want to do. If some men could be stationed at a base hospital and remain indefinitely out of range and danger, with a comfortable bed, good food, etc., they would gladly go, but for the information of those who have not looked into the matter, I will say that the rank in the Army makes no difference in the duties to which the man may be assigned, or the place. He is subject to orders, and while it is the endeavor of the department to use a man where he can be used to the best advantage, yet he may be detailed to any hospital service in which there is need of a surgeon.

THE ETIOLOGY AND SERUM TREATMENT OF EPIDEMIC POLIO-MYELITIS*

JOHN W. NUZUM, M.D., Chicago

Historical—The disease infantile paralysis or poliomyelitis, as you all know, is not a new disease. In 1840 von Hiené separated this type from other forms of paralysis, and in 1887 Medin first directed attention to its occurrence in widespread epidemics. The Swedish epidemic of 1905 has been carefully studied by Wickman, Harbitz and others. From the continent the disease has spread to other countries, and within the past few years serious outbreaks have occurred in the United States. In New York City in 1907-1908 there were approximately 2,000 cases with a mortality of 6 to 7 per cent. Dur-

*Read before the Johnson County Medical Society, Iowa City.

ing the summer of 1916, New York was again visited by a terrible epidemic of some 9,000 cases, with a mortality of approximately 25 per cent.

Chicago was likewise visited by an epidemic during the summer of 1916. According to the Chicago Health Department there were 285 cases with a mortality of 15 per cent. Practically all of these cases were isolated in one ward of the Cook County Hospital. Necropsies have been performed on many of the fatal cases. During the summer and autumn months of 1917, a second epidemic occurred in Chicago and close to 500 patients were admitted to the isolation wards of our hospital. The facts which I shall present



FIGURE 1. The poliomyelitic coccus as it appears in a 48 hour aerobic glucose broth culture.

for your consideration this evening are based entirely on the results of an intensive clinical and experimental study of this disease over a period of the past two years in the Cook County Hospital. A detailed report of the isolation of the causative microorganism, the production of an immune horse serum and the striking results obtained in the serum treatment of this disease in man, have appeared from time to time in various medical journals. My talk this evening represents an abstract of the several published reports.

Bacteriology—Pieces of the brain and spinal cord were secured as soon after death as possible under sterile conditions, and while the bodies were still warm, and inoculations were made on various cultural media. In practically all cases studied to date, we have succeeded in isolating the same peculiar microorganism in pure cultures. Dr. Mathers of the Memorial Institute for Infectious Diseases, and Dr. Rosenow of the Mayo Clinic, working independently, have both reported similar results.

Aerobic and anaerobic cultures were regularly made from small pieces of the human brain and

spinal cord inoculated into sterile ascites fluid, ascites dextrose broth, and ascites fluid to which a small piece of sterile rabbit's kidney was added. The cultures were placed in the incubator at 35 C. (95F.) for from one to ten days.

In the aerobic cultures, bacterial growth usually appeared at the end of twenty-four hours as a fine granular grayish precipitate along the side of the test tube, rapidly settling to the bottom of the tube to form a heavy white sediment. In anaerobic cultures made according to the method of Flexner and Noguchi, bacterial growth is slow. Usually after four or five days—often as long as seven—a scanty growth first manifests itself as an opalescence arising around the tissue fragments in the bottom of the test tube and gradually ascending upward in the medium. Later a fine granular precipitate forms which falls to the bottom of the culture tube.

Morphologically the microorganism, when grown aerobically, is a gram-positive micrococcus arranged in pairs and tetrads chiefly, but also appearing in short chains of from three to five. It presents essentially a diplococcus arrangement. In anaerobic cultures and in the human ascitic fluid mediums to which a sterile piece of rabbit's kidney is added, growth is scanty and the organism appears in a much smaller form; at the end of two or three weeks it has been repeatedly observed as a very minute micrococcus and barely visible under the oil immersion lens. It stains by Gram's method and appears in pairs, short chains of from three to five, and in small clumps. After from five to seven days' growth under anaerobic conditions, it often closely approximates in size an early twenty-four-hour growth of the micrococcus grown aerobically.

On blood agar plates the organism appears at the end of forty-eight hours as a pin point colony surrounded by a narrow zone of hemolysis and often exhibiting a slight greenish color. When a growth has once been obtained, subcultures grow rather luxuriantly on the usual cultural mediums. It ferments the saccharids with the exception of inulin and raffinose. Gelatin is liquified at room temperature. The thermal death point of the microorganism has been found to be an exposure of 55 C. (131 F.) for thirty minutes. It stains with varying intensity with the anilin dyes.

From the cerebrospinal fluid obtained by lumbar puncture from patients suffering from acute poliomyelitis, the same gram-positive diplococcus arranged in pairs and short chains has been isolated in pure culture with remarkable constancy after cultivation aerobically on ascites dextrose

broth to which a fragment of sterile rabbit's kidney has been added.

I would emphasize that we have found that this same peculiar coccus is present in the spinal fluid with striking regularity and can be easily isolated from the spinal fluid both before and after death. Cultures are obtained with great ease by inoculating a 1 per cent. dextrose broth media with 1 to 2 c.c. of the spinal fluid and incubating under aerobic conditions for twenty-four to forty-eight hours. Initial cultures on solid media are difficult to obtain. There is evidence at hand to show that this same coccus is present in the spinal fluid of cases from widely separated districts, and if future study shows that the coccus is a constant attendant of the disease, it would seem that the early diagnosis of infantile paralysis will be greatly facilitated.

The results of animal inoculation experiments with the poliomyelitic coccus have been recently reported in various medical journals. I feel that conclusive evidence has been brought forward to prove the etiologic relationship of the coccus to the disease infantile paralysis.

The Production of an Antipoliomyelitic Serum—In the Journal of the American Medical Association for January 6, 1917, I reported that by the process of animal immunization with the coccus regularly isolated from the spinal fluids and the central nervous systems of poliomyelitic patients, an antiserum can be produced. Furthermore, such a serum has been found to contain antibodies in high titer, viz., opsonin, agglutinins and complement fixation bodies. The serum possesses definite protective and curative properties against the coccus and also against injections of lethal doses of virus in monkeys. Accordingly it seemed fair to conclude that with potent polyvalent antiserum prepared in the manner outlined above, some definite therapeutic value might be anticipated in human cases of the disease.

Preparation of Serum—After serial injections with different strains of the coccus over a period of four months according to the method outlined above, the horse was bled, June 6, and the antibody content of the serum determined. With the employment of homologous strains of the coccus, agglutination was found to be complete at 1:5,000 dilution, while the point of opsonic extinction as estimated by the dilution method of Klein, was 1:6,144. From ten to fourteen days after the last injection, the horse was bled from the jugular vein and the blood collected in sterile flasks under aseptic conditions. The blood was allowed to clot, at first at room temperature, and later the flasks were placed in the ice box for from

twenty-four to forty-eight hours. The serum was decanted and centrifuged in sterile rubber capped containers. After repeated cultural tests for sterility, the clear hemoglobin-free serum is bottled in sterile flasks of 2 ounces capacity, plugged with rubber stoppers and sealed with paraffin. The serum for intraspinal administration is preserved in glass containers similar to those utilized in the preservation of antimeni-gococcic serum.

The serum employed by us has been used unactivated and unpreserved. The addition of 0.2 per cent. tricresol as a preservative has in our experience given rise to rather severe reactions

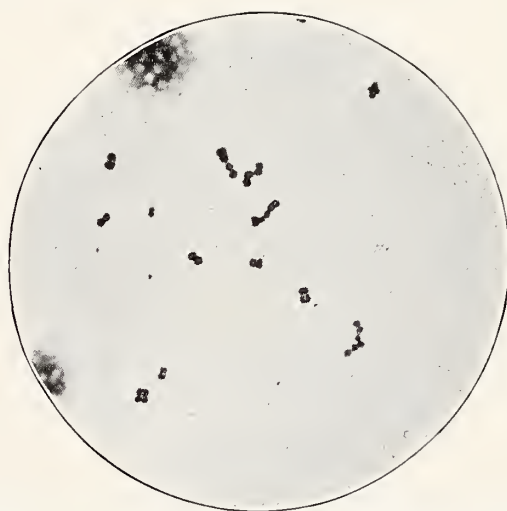


FIGURE 11. A 72 hour culture of the streptococcus of poliomyelitis as isolated from a fragment of human spinal cord (aerobic culture).

in two patients and been found to aggravate the local irritant effect. It is highly essential that only serum free from hemoglobin be employed, as its presence definitely increases the irritative effect. Regarding the duration of potency of the serum, it has been found that the antibody content as determined by opsonic extinction and agglutination tests of a specimen preserved in the ice box, has thus far remained unaltered over a period of three months.

Method of Administration—All of the patients have been treated with serum both by intraspinal injections and at the same time by intravenous administrations. A considerable number have also received intramuscular injections. Intraspinal injections of from 5 to 15 c.c. were given slowly by the gravity method after the previous withdrawal of an equal or greater amount of spinal fluid. It is well known that in poliomyelitis the lumen of the blood-vessels is constricted by the encircling ring of mononuclear lymphocytes—the so-called perivascular infiltration. Accordingly it would appear that the amount of serum which can be safely injected intraspinally

in children without danger of producing further injury to the brain stem, must be small. At the same time it seems highly desirable to inject larger amounts intravenously in order to affect as rapid a neutralization of the virus as possible. In young children, in whom the median basilic vein is too small to find, we have regularly turned the head to one side; and if pressure is made with the finger just above the clavicle, the external jugular vein stands out very prominently even in infants, and can be readily entered by the needle. From 15 to 30 c.c. of serum are slowly injected intravenously.

Clinical Picture Following Serum Therapy—In many of the acute cases, the administration of serum has been followed by a critical fall in the temperature occurring from twelve to thirty-six hours after injection. Coincident with this there is a slowing of the pulse rate and definite clinical evidence of general improvement. The initial rise in the temperature usually attributed to the injection of human serum has occurred in only a very few cases. When the temperature has remained high we have repeated the intravenous injection in a few patients within twelve hours after the first treatment. It has seemed to us that the temperature may well serve as a guide to the optimum dosage of serum. Serum reactions have occurred in approximately one-third of our cases usually from five to eight days after injection, and manifest themselves as an urticaria which disappears within from twenty-four to forty-eight hours. These have always rapidly disappeared, and beyond the transient discomfort to the patient, have appeared of little consequence.

Analysis of Case Histories—During the latter part of the Chicago epidemic of 1916, one of us (J. W. N.) first treated a small series of ten cases of typical poliomyelitis by intraspinal and intravenous injections of the immune serum produced by injections of the poliomyelitic coccus in the sheep. The first patient was treated December 29, 1916. Ten patients in all were treated, with one death. Two patients who received early treatment, recovered completely and warrant brief consideration:

Case 1—G. S., girl, aged eight years, December 27, 1916, had headache and vomited. December 28, there was weakness of both legs. December 29, she was admitted to the hospital, with temperature of 99.6 F. She was stuporous. The pupils were dilated and unequal. The right leg was flaccid, and the patellar jerk was absent. The left leg was weak. There was paralysis of the urinary bladder, and incontinence of both urine and feces. The bladder was distended to the level of the umbilicus.

December 29, 15 c.c. of immune serum were injected intraspinally and 20 c.c. of serum intravenously. January 6, the child appeared bright and took nourishment. Twenty c.c. of serum were injected intravenously. January 9. The bladder and the bowels were acting. The paralysis never progressed, and after a sojourn of five weeks in the hospital, the patient was discharged with a complete return of function of both legs.

Case 2—Mrs. B., aged twenty-five, March 1, 1917, had headache, coryza and drowsiness. March 4, she was unable to move her legs. There was incontinence of urine and feces. March 5, she was admitted to the hospital. There was flaccid paralysis of both legs, with loss of Achilles' and knee jerks. The bladder was distended with urine. There was apparent weakness of both hands. There was bilateral ptosis. The cerebrospinal fluid was clear, with eighty-five cells per cubic millimeter and positive globulin tests. March 6, 15 c.c. of serum were injected intraspinally, and 20 c.c. intravenously. March 8, 25 c.c. of spinal fluid were withdrawn and 15 c.c. of serum injected intraspinally. March 9, the temperature was normal and there had been no spread of the paralysis. March 14, the patient talked irrationally and complained of difficulty in seeing objects. March 20, a plaster cast was applied to the legs by Dr. Parker.

The patient made a complete recovery, and walked out of the hospital, April 12, 1917. She has been examined on two subsequent occasions, and has regained her tendon reflexes and apparently complete function of her legs.

The foregoing cases served to emphasize the possible value of serum therapy and the importance of early administration of serum. The first patient was treated within forty-eight hours after definite symptoms of meningeal invasion. The second patient came under treatment at a later date when the paralysis was marked and rather disseminated over the cerebrospinal axis. Both patients received repeated injections of serum intravenously and intraspinally, and both made a good recovery.

During the present epidemic of 1917 and up to October 1, we have treated a total of 159 patients. During the same period, 250 patients have been admitted to the isolation wards of the Cook County Hospital on the services of Drs. Francis, Hoyne, Blattt and Irish, to whom we are indebted for the opportunity to treat and study these patients. All patients have been admitted in rotation to the services of these different attending physicians, and all patients admitted on one of these services have served as controls so far as they have not been treated with immune serum. The observation was made early in the course of serum therapy that patients with respiratory paralysis represent the end-pic-

ture in infantile paralysis and are not benefitted either by serum therapy or by any other known treatment. Seven patients with typical respiratory paralysis have been given serum as a last resort without any apparent beneficial effects. These seven patients have been included in our total number of nineteen deaths in cases in which the patients received serum therapy. More recently we have not treated patients exhibiting an advanced respiratory paralysis at the time of admission to the hospital. With this possible exception there has been no selection of cases for serum treatment.

We have thus far treated 159 patients admitted to the Cook County Hospital in all stages of infantile paralysis. Of these 159 cases, nineteen patients have died, giving a mortality rate of 11.9 per cent. Excluding seven patients admitted to the hospital with advanced respiratory paralysis and dying within a short time after admission, to whom serum was given as a last resort, we have twelve deaths with a mortality rate of 7.5 per cent. At first glance these figures are in striking contrast to the total number of 100 patients admitted to the hospital during the same period of time and not receiving serum therapy. Of these 100 patients, thirty-eight died, a mortality rate of 38 per cent. However, it must be stated in all fairness that of these 100 untreated cases, twenty-five patients had an advanced respiratory paralysis on admission.

Mortality in patients treated with serum in the Cook County Hospital as compared with untreated cases from July 20 to October 1, 1917:

	Total Cases	Deaths	Mortality Per Cent
Untreated cases	301	97	32
Serum treated cases.....	152	12	7.5

The mortality rate of a series of serum treated cases as compared with a series of untreated cases occurring during the same period of time and during the same epidemic of 1917.

For purposes of analysis and comparison we have divided the patients treated with serum into two groups. Group I comprises a series of fourteen cases in which no definite paralysis could be detected at the time serum treatment was instituted. The group has been further subdivided in class I, comprising ten typical preparalytic cases in all of which the history, clinical examination and spinal fluid findings were positive for poliomyelitis, and class II, consisting of four patients presenting the clinical picture of the meningeal or encephalitic type of the disease, namely, rigid neck, opisthotonos, stupor, muscular twitchings, spastic extremities, etc. Group II comprises a

series of 141 patients, all exhibiting varying degrees of paralysis at the time of treatment. This group has for convenience been subdivided into class I, composed of patients in whom the paralysis appeared to be spreading, and class II, consisting of patients with definite paralysis of varying duration. Brief summaries are given of instructive case histories illustrating the various group divisions.

GROUP I. NO PARALYSIS AT THE TIME OF TREATMENT (TEN CASES)

Class 1. Preparalytic Cases

Case 98—Boy, aged eighteen months, September 17, 1917 had fever and showed irritability. September 18 he complained of pain in the legs when made to stand. September 19 he was admitted to the hospital. The temperature was 101.4, the pulse 120, and respiration 26. The cerebrospinal fluid revealed 120 cells per cubic millimeter. Globulin tests were positive. No paralysis was detected. September 19, at 2 p. m., 5 c.c. of serum were injected intraspinally and 15 c.c. intravenously. September 20, the temperature was normal and no paralysis ever developed.

Serum was given forty-eight hours after the first symptoms, and the temperature fell from 101.4 to normal within twenty-four hours and paralysis never developed.

Case 79—Boy, aged three years, September 13, 1917, was brought to the hospital by the mother, who stated that the patient complained of headache, pains in the legs and back of the neck, and felt too sick to get out of bed that morning. On admission the temperature was 101. The spine sign was positive. The cerebrospinal fluid revealed twenty-seven cells per cubic millimeter. Globulins were * * *. No paralysis was detected. September 13, 10 c.c. of serum was injected intraspinally and 25 c.c. intravenously. September 14, the temperature was 99.2. Twenty-five c.c. of serum were injected intravenously. September 15, the temperature was normal. September 18, a definite right sided facial paresis had appeared, which, however, was transitory, and the patient recovered completely.

This patient received serum within twelve hours after the first symptoms appeared. The interesting feature of this case is the appearance of a facial paresis five days later, which lasted only two days, and recovery was uneventful.

Case 13—Girl, aged three years, August 15, 1917, on admission to the hospital, had a temperature of 101; the pulse was 120, the respirations 22. There were fine twitchings of the muscles of the entire body. There was left sided facial paresis, with ptosis of the left upper eyelid and drooping of the left corner of the mouth. No paralysis was detected.

The cerebrospinal fluid was clear, with 59 lymphocytes. The globulin was increased. August 15, 10 c.c. of serum were injected intraspinally and 18 c.c. intravenously. August 16, the temperature was normal. Ten c.c. of serum were injected intraspinally. Recovery was complete.

Case 46—Girl, aged six months, September 2, 1917, had fever and vomited. September 4, the child was admitted to the hospital. The temperature was 99.6, the cerebrospinal fluid, 170 cells per cubic millimeter. The globulin was * * *. No paralysis was detected. Ten c.c. of serum were injected intravenously. September 8, 10 c.c. of serum were injected intravenously. The temperature was normal the following day, and paralysis never developed.

Case 17—Girl, aged ten months, September 18, 1917, was admitted to the hospital with a history of fever and vomiting two days before. The temperature was 99, the pulse 120 and respirations, 26. No definite paralysis was present, but the right arm and shoulder appeared paretic. The cerebrospinal fluid revealed 42 lymphocytes per cubic millimeter. The globulin test was † † †. September 18, 12 c.c. of serum were injected intravenously. The weakness of the right arm and deltoid rapidly disappeared, and recovery was uneventful.

Ten patients, all undoubted instances of pre-paralytic poliomyelitis, have been treated with immune serum in the early stages of the disease, with prevention of paralysis and complete recovery in 100 per cent. Whether or not paralysis would have developed in all of these patients without serum treatment cannot be determined. As to the apparent advantage of the early administration of serum, there can be no doubt.

Class 2. Meningeal Type (Four Cases)

Case 30—Girl, aged twenty-two months, August 24, 1917, was admitted to the hospital. No history of the duration of the illness was available. The temperature was 101.6. The child was extremely rigid and stuporous. There were involuntary twitchings of the arms and hands. The legs were spastic. There was marked tremor of the neck and face muscles. No paralysis was detected. The cerebrospinal fluid was clear; pressure was markedly increased, and there were 154 cells per cubic millimeter, with globulin increased. August 25, 20 c.c. of serum were injected intravenously. August 26, the temperature was 101. Five c.c. of serum were injected intraspinally and 15 c.c. intravenously. The temperature reached normal within forty-eight hours, stupor and rigidity of muscles disappeared, and the patient made a complete recovery.

Case 36—Boy, aged three years, August 30, 1917, was admitted to the hospital. Illness began five days before. The patient lay quiet on the bed, the head retracted and rigid, with marked spasticity of both arms and legs. The reflexes were exaggerated.

No paralysis was detected. He cried out when the chin was flexed on the abdomen. The cerebrospinal fluid was clear and contained 320 cells per cubic millimeter, with positive globulin tests. August 30, 5 c.c. of serum were injected intraspinally and 12 c.c. intravenously. August 31, 6 c.c. of serum were injected intraspinally and 15 c.c. intravenously. The patient made a complete recovery.

The foregoing cases are instructive in that they simulate the clinical picture of meningitis. The disease expends its greatest insult on the upper motor neuron, and the mortality of this type of cases is high. We have treated four meningeal types of poliomyelitis with one death, a recovery rate of 75 per cent.

GROUP II. CASES SHOWING PARALYSIS AT TIME OF TREATMENT

Class 1. Paralysis Extending

Case 26—Boy, aged five years, August 21, 1917, was admitted to the hospital with a history of onset two days previously and the condition growing worse. The child was acutely ill. He could not move head or arms. There was paralysis of the sternocleidomastoid muscles. The head fell backward when the patient was lifted by the arms. There was flaccid paralysis of both arms, and the patient could move the fingers only slightly. The temperature was 100. The cerebrospinal fluid revealed 33 cells per cubic millimeter. The globulin was * * *. August 21, 10 c.c. of immune serum were injected intraspinally and 25 c.c. serum intravenously. August 22, the respirations were embarrassed. There was slight cyanosis. Ten c.c. of serum were injected intravenously, 5 c.c. intraspinally, and 10 c.c. intramuscularly. August 23, the child was given 20 c.c. of serum intramuscularly. The patient regained good use of the left arm and hand, but the paralysis of the neck, muscles and right arm remained unchanged.

This case is interesting because the location and extent of the paralysis were against the patient's chances for recovery. The early convalescence was stormy, and at one time was thought that the child had developed a respiratory paralysis. He was given a total of 80 c.c. of serum, and recovered with good use of the left arm. Whether or not the serum prevented a fatal respiratory paralysis cannot be determined; but we do know that this class of untreated cases has been attended by a high mortality.

Case 28—In a girl aged six years, the illness began August 18, 1917, with a convulsion followed by pains in the legs and the back of the neck. August 23, there was weakness of the right leg, and the child became stuporous. August 24, she was admitted to the hospital with the tentative diagnosis of epidemic meningitis. The temperature was 101, the

pulse 128, and respirations 30. The child was stuporous, and there was flaccid paralysis of both legs. The neck muscles were parietic. The spinal fluid was clear and contained 171 cells per cubic millimeter. The globulin test was * * *. August 24, 10 c.c. of serum was injected intraspinally and 20 c.c. intravenously. August 25, the temperature was 99. The stupor was gone. General improvement was noted. Eighteen c.c. of serum were given intravenously. The temperature reached normal twelve hours after the second injection of serum. The patient was discharged from the hospital September 24, with paralysis of the legs but slightly improved.

Whether the prompt subsidence of the stupor and the critical drop in temperature can be ascribed to the serum treatment, cannot be definitely determined. The paralysis did not progress.

Case 3—The onset in a girl, aged two years, occurred July 26, 1917, with headache, fever and vomiting. July 28, there was flaccid paralysis of both lower extremities, with weakness of the neck muscles and paresis of both arms. July 29, when she was admitted to the hospital, the temperature was 103, the pulse 150, and respirations 60. There was flaccid paralysis of both lower and upper extremities. There was beginning respiratory involvement. The spinal fluid revealed forty-seven cells per cubic millimeter. Ten c.c. of serum were injected intraspinally after previous withdrawal of 15 c.c. of spinal fluid. July 30, the temperature was 100. The patient had developed a marked respiratory and facial paresis. Spinal puncture was performed and 15 c.c. of fluid withdrawn slowly. Five c.c. of serum were injected intraspinally and 5 c.c. intravenously. July 31, the temperature was 103, the pulse 174, and respirations 64. The child died.

This case is of interest for several reasons. It represents the typical form of Landry's paralysis with rapid ascending progression of the paralysis and ultimate involvement of the respiratory center and death. Not a few similar cases have occurred in this epidemic. The optimal time for serum treatment obviously was between July 26 and July 28. Seventy-two hours after the onset and at a time when all the extremities were paralyzed, the respiratory center involved, and the prognosis certain, 10 c.c. of serum were given intraspinally. The temperature dropped from 103 to 100, and accordingly a second dose of 10 c.c. serum was administered. Death occurred July 31. This case serves to confirm the impression gained of the futility of any form of treatment after the respiratory center has become involved. Furthermore, we subsequently learned that the best results have been obtained in those patients receiving larger doses of serum.

Case 74—Boy, aged two years, September 9, 1917, had fever, headache and vomiting. September 10, there was weakness of both legs. September 12, he was admitted to the hospital. The temperature was 100. There was flaccid paralysis of the right leg. Weakness of the left leg was marked. The head fell backward when the child was raised by the shoulders, and the neck muscles were parietic. The cerebrospinal fluid was clear and contained 50 cells per cubic millimeter. The globulin test was * * *. September 12, 6 c.c. of serum were injected intraspinally, and 20 c.c. intravenously, and September 14, 10 c.c. intraspinally and 20 c.c. intravenously. September 15, the temperature was normal and has remained normal to date. The paresis of the neck muscles and right leg rapidly disappeared. The flaccid paralysis of the left leg still remains.

Serum therapy was instituted forty-nine hours after the onset of paralysis in the patient. A total of 50 c.c. of serum was injected, and the temperature dropped to normal within twenty-four hours. The paresis of the right leg never progressed, and the weakness of the neck muscles rapidly disappeared. This coincides with our observations that it is much easier to prevent paralysis altogether and to lessen the spread and severity than to effect its rapid retrogression.

Class 2. Paralysis Present

Case 95—Boy, aged five years, September 13, 1917, had fever, headache and vomiting. September 17, he had pain in the left shoulder and back, and was unable to use the left arm. September 17, he was admitted to the hospital. The temperature was 103. Pain was elicited on manipulation of the left shoulder. There was definite paresis of the left shoulder muscles. The cerebrospinal fluid was clear and under increased pressure; it contained 21 lymphocytes per cubic millimeter. Globulin was increased. September 17, 10 c.c. of serum were injected intraspinally and 25 c.c. intravenously. The temperature dropped to normal within thirty-six hours. There was no extension of the paralysis. On discharge from the hospital the child had regained complete muscular power in the left shoulder girdle and arm.

Case 4—Onset in a boy, aged nine months, occurred July 27, 1917, with fever and vomiting. July 28, weakness of both legs was noted and inability to stand. July 29, on admission to the hospital, the temperature was 101. There was complete flaccid paralysis of the left lower extremity, and weakness and paresis of the right leg. The cerebrospinal fluid contained 33 cells per cubic millimeter. Globulin tests were positive. July 29, the patient received 10 c.c. of serum intraspinally. July 31, the temperature was 99.2; 5 c.c. of serum were injected intraspinally. August 2, the temperature was normal. No extension of the paralysis had occurred. August

4, 5 c.c. of serum were injected intraspinally and 10 c.c. intravenously. The paresis of the right leg cleared up. The left leg remained flaccid on the patient's discharge from the hospital.

Case 97—Onset in a boy, aged ten years, occurred September 15, 1917, with headache, fever and vomiting. September 18, there was weakness of both legs, and the patient could not stand up. September 19, on admission to the hospital, the child appeared acutely ill. There was paralysis of both legs with loss of tendon reflexes. Both arms were paretic, and he could move only the fingers. The spinal fluid was clear and contained 109 cells per cubic millimeter with globulin * * *. September 18, 15 c.c. of serum were injected intraspinally and 20 c.c. intravenously. September 21, the temperature was normal and has remained normal to date. The paresis of the arms has rapidly disappeared, and the patient has good use of the arms and hands. September 30, the legs have remained flaccid, and the Achilles and patellar reflexes are still absent.

Case 6—Girl, aged eleven months, August 2, 1917, was admitted to the hospital with a history of the onset of paralysis seventy-two hours before. The temperature was 102. There was flaccid paralysis of both legs with loss of reflexes. There was left sided facial paralysis. The neck was rigid and the spine sign positive. There was spasticity of both arms. August 3, 3 c.c. of serum were injected intraspinally and 10 c.c. intravenously. August 4, the temperature was 101.4. The condition remained unchanged. Three c.c. of serum were injected intraspinally and 10 c.c. intravenously. August 5, the temperature dropped to normal and has remained normal to date. The facial paralysis and rigidity of the neck rapidly disappeared. The legs are still flaccid.

Case 65—The onset of disease in a boy, aged fourteen months, occurred September 4, 1917, with fever and vomiting. September 9, paralysis of both legs developed. September 11, on admission to the hospital, the temperature was 100. There was flaccid paralysis of the legs and a paresis of the neck muscles. Six c.c. of serum were injected intraspinally and 25 c.c. intravenously. There was a critical drop in temperature to normal within twenty-four hours after the injection. The weakness of the neck muscles rapidly disappeared. The paralysis of the legs remained unaltered.

Case 118—The onset in a girl, aged one year, occurred September 22, 1917, with vomiting and fever. She was admitted to the hospital September 23, just twenty-four hours after the first symptoms. The temperature was 102. The child appeared acutely ill. There was marked left sided facial paralysis with inability to close the left eye. The left corner of the mouth drooped completely. No paralysis of the extremities was detected. The spinal fluid contained 21 lymphocytes per cubic millimeter, with positive Noguchi, Nonne and Ross Jones tests. September 23, just twenty-four hours after the onset, 5 c.c. of

serum were injected intraspinally and 15 c.c. intravenously. A critical drop of the temperature to normal occurred the following day. Paralysis has never appeared in the extremities. September 30, facial paralysis is disappearing, and the prognosis for complete recovery is excellent.

Case 107—Girl, aged two and one-half years, September 16, 1917, had fever and headache. September 20, weakness of the left arm appeared. September 21 she was admitted to the ward. The temperature was 101. The child appeared acutely ill. She was stuporous. The neck muscles were paretic. There was weakness of the left shoulder and arm. The deltoid muscle was paretic, with loss of reflexes in the left arm and shoulder. September 21, twenty-six hours after the onset of weakness of the shoulder and neck muscles, 10 c.c. of serum were injected intraspinally, and 25 c.c. intravenously. September 22, the condition had improved and the stupor was gone. Ten c.c. of serum were injected intraspinally and 20 c.c. intravenously. September 25, the temperature reached normal, and there had been a rapid general improvement. The paresis never progressed. The child can move the left arm in all directions, and the prognosis appears excellent for complete recovery.

The foregoing case histories are included to illustrate the definite value of serum treatment in preventing the spread of the paralysis. All of these patients were treated at the optimal time, from twenty-four to forty-eight hours after the onset. It will be noted that while the paretic muscles and weakness of the extremities rapidly disappeared following serum therapy, flaccid paralyzes remained unaltered.

Comment—We have treated a series of 159 cases of poliomyelitis with immune serum prepared in the horse by repeated intravenous injections of the coccus isolated chiefly from human poliomyelitis sources. Prior to its use in man, we have proved that this serum, prepared in the horse in the manner outlined above, possesses both protective and curative properties in experimental poliomyelitis in monkeys. We proceed now to the estimation of the value of the serum in human poliomyelitis. It is obvious that the value of serum must be based both on the clinical study and impressions gained in the treatment of individual cases, and on statistical evidence acquired after treatment of a large series of cases properly controlled.

Of the group of fourteen cases of undoubted instances of poliomyelitis in which no paralysis could be detected at the time serum treatment was instituted, thirteen patients recovered completely and one died. None of these patients developed paralysis subsequent to serum treatment. These facts serve to substantiate the impression

gained from the treatment of the entire series of cases, that it is much easier to prevent paralysis altogether and definitely to arrest the extension and lessen the severity of the paralysis than to bring about its rapid disappearance. It should be mentioned in this connection, however, that we have repeatedly observed definite weakness or paresis of extremities rapidly disappear following serum therapy. Furthermore, of the entire 159 cases treated in all stages of paralysis, in only three late cases has the paralysis extended to the respiratory center with a fatal result. This is significant when we recall the unusually high mortality of the present epidemic with the relatively large number of fatal respiratory paralysees among untreated patients.

Regarding the mortality rate, we have thus far treated a total number of 159 patients with nineteen deaths, a mortality of 11.3 per cent. Mention should be made of the fact that of these nineteen fatal cases, seven patients were admitted to the hospital with advanced respiratory paralysis, and all died within periods varying from seven to seventy-two hours after admission. These patients have been included in estimating the total mortality, obviously an unfair test for estimating the therapeutic efficiency of the serum.

From statistics kindly furnished by the Health Department of the City of Chicago, a total of 301 cases were reported with ninety-seven deaths, a mortality of 32 per cent. for the period of July 20 to October 1, 1917. During this same period of time we have treated a series of 152 patients, excluding seven respiratory paralysees on admission, with twelve deaths, giving a mortality rate of 7.5 per cent.

In by far the majority of patients receiving serum, the fever, at times high, has fallen rapidly to normal within periods varying from twelve to twenty-four hours. Coincident with this critical drop of the temperature, there usually occurs a slowing of the pulse rate and other clinical evidence of rapid general improvement.

Finally, we wish to consider briefly the extremely important problem of the dosage and mode of administration of the serum. A careful analysis of the case histories suffices to demonstrate the harmlessness of the serum when slowly injected both intraspinally and intravenously. The serum has always been tested for sterility after passage through a Berkefeld filter, and has been used without a preservative. It must be free from corpuscles and hemoglobin.

As in other acute infectious diseases, recovery from poliomyelitis must depend on the process of self-immunization. Accordingly, the simul-

taneous intraspinal and intravenous injections of immune serum afford the most rapid way of flooding the central nervous system with specific antibodies to neutralize the virus of the disease. We have attempted to treat all cases as early as possible with relatively large doses of serum. Obviously the amount of serum that can be safely given to a child intraspinally is small. Accordingly, we have regularly injected small doses of from 5 to 10 c.c. of serum very slowly by the gravity method after the previous withdrawal of an equal or greater amount of spinal fluid. At the same time intravenous doses of from 10 to 30 c.c. of serum are given according to the age of the patient. In many patients we have repeated the intravenous injections at twelve to twenty-four hour intervals, using the temperature as a guide to dosage, with beneficial results. The majority of patients have received total amounts of serum varying from 40 to 75 c.c., depending on the age and severity of the case. In a few critical cases we have injected a total amount of 150 c.c. within seventy-two hours, with beneficial results.

SUMMARY

1. Of 159 patients receiving serum in all stages of the disease, nineteen died, a mortality of 11.9 per cent. Among 100 cases occurring during the same period of time, in which the patients did not receive serum, thirty-eight patients died, a mortality of 38 per cent.

2. We have treated 152 patients in all stages of infantile paralysis, excluding seven cases presenting respiratory paralysis on admission, with eleven deaths—a mortality rate of 7.2 per cent. During the same period of time, a total of 301 cases were reported to the health department with ninety-seven deaths—a mortality of 32 per cent.

3. This series of treated cases suffices to demonstrate the harmlessness of serum treatment when the serum is free from hemoglobin, sterile to repeated cultures, and the injections are slowly made and all known rules of precaution are observed.

4. The serum appears to possess the power of definitely preventing the onset of paralysis when administered early in the disease. In ten undoubted instances of poliomyelitis in which no paralysis was detected at the time serum was administered, prevention of paralysis and complete recovery resulted in 100 per cent.

5. The action of the serum is more definite in arresting the extension of paralysis and diminishing the severity than in effecting its disappearance.

6. As in other acute infectious diseases, the

earlier the serum is administered, the more striking are the results obtained.

7. Serum should be injected intraspinally in small doses and at the same time intravenously in larger amounts. The temperature has been employed as a guide to the dosage.

8. The injection of serum is followed by a critical fall in the patient's temperature. Coincident with this, there occurs a slowing of the pulse rate, and usually other definite clinical evidence of general improvement.

9. In doubtful early cases, the decision to use serum should rest on the bacteriologic, chemical and microscopic examination of the cerebrospinal fluid.

With your permission I wish to show you a few lantern slides illustrating the recent bacteriological findings and demonstrating the protective and curative properties of immune serum in human poliomyelitis.

RADIUM IN THE TREATMENT OF CARCINOMA OF THE UTERUS

L. L. MYERS, M.D., Iowa City

From the Department of Gynecology and Obstetrics, College of Medicine, University of Iowa

The value of any therapeutic agent in a given type of cases, such as carcinoma, is arrived at only after those cases have been carefully selected and classified and the method of using the agent has been tried over years of time.

Up to 1912 the best method of treatment of cancer of the uterus was surgery, either the simple or radical operation. At first simple vaginal hysterectomy held prominence. This was given up as a cure in about five years, because the operation was applicable to relatively only a small number of cases, and again the percentage of ultimate cures it yielded was relatively very small.

The next operable measure was the radical vaginal hysterectomy of Schuchart's. This has given a larger percentage of cures, but is a very difficult operation, with a high mortality and numerous sequela, such as vesical, rectal and ureteral fistulae. The operator also has the disadvantage of not being able to see definitely what he is doing, and of making a careful examination of the lumbar lymph glands.

Following this came the radical abdominal hysterectomy of Wertheim. This has given the highest percentage of permanent cures of any operable measure, notwithstanding its high primary mortality. In regard to this treatment, Wertheim states that 50 per cent. of his cases are operable,

and that 50 per cent. of those operated upon, remain well.

Kelly¹ states that 57 per cent. of his cases are operable. Kronig states that not more than 20 per cent. of the cervix cancers are permanently cured by operation, and less than 5 per cent. of the primary vaginal cancers. Fabre² declares that in about 25 per cent. of uterine cancers is the growth in a condition to be eradicated by operation.

It is well known that carcinoma of the fundus uteri gives much better results from operation than carcinoma of the cervix. In the former, recurrence does not occur in more than 50 per cent. of the cases, even with a simple hysterectomy.

However, statistics as to results obtained are misleading, first because of time of operation; second, because of completeness of operation; and third because of a histological classification.

Some surgeons will operate much sooner than others, and some will do a more extensive operation than others. Unless these things are all noted, along with the type of carcinoma, statistics as to results from operation will not be absolute. At best, no series of cures has yet reached 50 per cent. by hysterectomy.

One thing of course is needed, and that is an earlier and more systematic diagnosis of carcinoma uteri. Physicians are too prone to pass up the disease in its early stages, and without any examination of the patient whatever, will tell them that it is nothing serious and that the slight bloody discharge they are having will soon stop. Dr. Earnest V. Smith, formerly of Mayo Clinic, stated "that 65 per cent. of 100 cases of uterine carcinoma, had consulted two or more physicians before he saw them, and that no vaginal examination had been made."

Dr. John G. Clark³ of the University of Pennsylvania says that, "of all the cases of uterine carcinoma, that had come to the hospital in the last three years, 90 per cent. were inoperable." It is only when cases are recognized before they become inoperable, that we will find the best results from hysterectomy.

There are many arguments against the radical hysterectomy, chief of which are the following: The high primary mortality, being about 25 per cent. with the most experienced operators and reaching up to 50 per cent. for those less experienced or proficient. Also, on account of the

1. Kelly and Burham—Radium in treatment of carcinoma of cervix uteri and vagina. *Journal A. M. A.*, Vol. lxxv, p. 1874.

2. Fabre—Indications for radium treatment of uterine cancer. *Surgery, Gynecology and Obstetrics*. Sept., 1917.

3. Clark, J. N.—Radium in Carcinoma Cervix. *Annals Surgery, Phil.*, November, 1916.

difficulty of the operation, it should not be advised until the primary mortality can be lowered by a simplification and perfection of details.

The extensive glandular dissection is not justified, because this adds to the complexity of the operation and does not sufficiently increase the number of permanent cures.

The chief advantage of the operation lies in the excision of an extensive area of the vagina and parametrium.

Usually also, there is severe pain in the pelvis following radical hysterectomy. This is due to the retraction of the pelvic tissues to the peritoneum and pelvic ganglion on the pelvic walls.

In the last five years radium has been used extensively in the European and larger American clinics in the treatment of carcinoma of the uterus. Many glowing reports and publications have been issued, some going so far as to claim that it is nearly a specific in cases without general metastases, while all admit that it has a very beneficial action.

That radium has a positive destructive action on carcinoma cells is known. Schauta demonstrated this beyond question in his first series of thirteen cases. In these patients, 50 to 100 milligrams of radium were applied uninterruptedly for from three to eleven days, and repeated in similar dosage after an interval of from twelve to twenty-two days. His results include—one case died of pyonephrosis; eight showed steady loss of weight, with diarrhea, tenesmus, fever, vomiting, headache, reduction in blood count and death. The autopsy findings showed severe necrosis and fistulae, with diphtheritic and purulent inflammations of rectum and bladder, sigmoiditis, and ulcerative processes in the pelvic coils of the ileum. However, not in any case at the autopsies was there a single instance of a trace of carcinoma found.

Cheron and Reubens—Duval proved that carcinoma cells killed by radium cannot regenerate. They treated a case of inoperable carcinoma of the cervix, who died fifteen months later of cerebral softening. Post-mortem examination of all tissues and internal organs removed failed to show any carcinoma cells.

Schmitz⁴ and Ransohoff⁵ have each described the histological changes in carcinoma treated by radium. Following Schmitz studies—In the first stage there is an enlargement of carcinoma cells, hyperchromatosis, and thickening of the nuclei. These changes are evident in all cases and usually

occur within ten days after the first application of radium.

In the second stage there is karyolysis, karyorrhexis, cytolysis and cell detritus. This is generally observed from the first to third week of treatment.

The third stage is that of absorption of cellular and nuclear debris by phagocytes. Macrophages and microphages are concerned in this stage.

The fourth stage is that of connective tissue proliferation and scar formation. It completes the histologic cure of cancer. The places left vacant by the dead carcinoma cells are immediately filled by young fibroblasts from the connective tissue stroma of the tumor. These fibroblasts become differentiated. This stage usually appears from the first to third month, but may occur much sooner.

Most observers believe in the selective or specific action of radium on malignant tissue, in the sense that tumor tissues are four to seven times more sensitive than normal tissues.

The exact manner in which radium causes an alteration of malignant tissue has not been fully settled. Two theories have been brought forth, the electron theory followed by Abbe and the nuclear theory followed by Keetman and Hartwig and Ransohoff.⁶ Both have strong arguments in their favor.

Abbe⁷ demonstrated beyond question that beta rays are the efficient factor in radium, repressing cell growth. He separated the beta and gamma rays of radium with an electro-magnet; as beta rays being negatively charged electrons and gamma rays being neutral, the electro-magnet caused a deflection of the beta rays. Four separate experiments were carried out under his supervision. These consisted of the action of combined and separated beta and gamma rays upon different types of growth. Mealworms, wheat and oat grains, marine invertebrates and tissue cell growth were all exposed to the different rays of radium and the effect on their growth noted. In all four experiments, the beta rays produced a retardation in growth, while the gamma rays caused no appreciable change in growth in any instance.

Furthermore, in not a single instance either with the separated or combined rays was there a stimulation to growth, thus disproving the statements of some authors, who claim that in some cases radium stimulates cell growth. We must conclude that when tumors show no tendency to retard in growth under radium, that is due to

4. Schmitz, Henry—The Action of Radium on Pelvic Organs—*Journal A. M. A.*, Vol. lxx, p. 1879.

5. Ransohoff, J. and J. L. *Lancet*—June 6, 1914.

6. Gould—*British Medical Journal*—January 3, 1914.

7. Abbe, Robert—Radium Beta Rays—*Medical Record*—November 28, 1914.

the peculiar resistance of the tumor or the excitation of some process such as infection. Such an example may be seen in the papillary cystadenomas of the ovary. Radium has practically no action on them.

In the one case we have treated, the tumor continued to enlarge rapidly even under treatment, and the mass had to be extirpated.

"The action of the beta rays in retarding growth, also persisted in following generations, even up to twenty in the instance of the individual cell growth. This part of the experiment being carried on by Dr. Alexis Carrell."

The known effect of gamma rays in producing secondary beta rays on meeting resistance, coupled with their greater penetrating power—a hundred times greater than that of beta rays, explains to us the action of radium on deep structures. It is the evolution of these secondary beta rays in the deep structures being radiated that can be considered the agent of greatest efficiency in radium work.

Carcinoma cells grow in a disorderly manner. It is only in this way that they differ from normal cells. A pathologist cannot tell an individual cell of carcinoma from a normal cell. Now if these beta rays (negative electrons) restore the orderly growth of normal tissue, this implies that the former orderly arrangement was sustained in equilibrium by a due supply of positive and negative electrons. Therefore it is these negative electrons that are wanted in the treatment of carcinoma.

As regards the nuclear theory. In the studies of Schmitz as described above, we see that much of the action of radium depends on the cell nucleus. Keetman and Hartwig have shown that, all things being equal, the action of radium on any tissue is in proportion to the abundance of nuclei, as radium depends on the denser substances in the nuclei of the cells. For this reason the more closely the tumor approaches the embryonal type, the more amenable it will be to treatment.

This accounts for the remarkable results obtained in lymphosarcoma, also the comparative obstinacy of periosteal and chondro-sarcoma to radium action. Fibrous structures are hard to effect, except keloids. Sarcoma is more amenable to treatment than carcinoma. Carcinoma of mucous membrane is less amenable to treatment than of skin. Individual resistance probably plays a part, because in some cases where we find two growths of the same type, one may be markedly affected while the other is not.

Most observers believe that the beneficial action of radium extends only four centimeters in

each way, thus acting over a space of 8 centimeters in diameter. Beyond this they say that the action is either negligible or that such a powerful dosage would have to be used, as would destroy normal tissue as well. Wickham who has treated over 1,000 cases of various kinds of cancer, says that the destructive action extends to a depth of 9 centimeters according to the dosage used and the sensitiveness of the organism, and further, the action extends this deep with the maintenance of the relative integrity of the normal tissues traversed. This deep action is due of course to the secondary beta rays given off by the gamma rays.

The intensity of the action of radium varies inversely as the square of the distance, the therapeutic action of radium on the amount of radium used, the method of filtering, the extent of time of exposure and the distance between the radium and the tumor mass to be treated. No definite and set rule can be used as to the destructive power of radium, because this depends on the type and vascularity of the carcinoma and the age of the patient.

However, for general purposes we might say that 100 mg. of radium will kill carcinoma at 1 cm. in six hours, at 2cm. in twenty-four hours, at 3 cm. in fifty-four hours; smaller doses in proportionally longer time, larger doses, however do not proportionally increase the action of radium, unless different portals of entry are used to the tumor mass, that is cross-firing. Should the distance traversed between the radium and tumor be doubled, the time of exposure must be quadrupled; if two cms. away, must have four times the time of exposure. If 3 cms. away, nine times, and if 4 cms. sixteen times.

At the University Hospital, we have 50 milligrams of radium element. This is contained in two glass tubes, each containing 36 milligram of radium barium sulphate which contains 25 milligram of radium element. The glass tubes are contained in small silver tubes, which are in turn enclosed in brass screens with a 1 mm. wall.

For intra-uterine treatments, these tubes are placed in tandem formation in a rubber catheter, which has a round, end, making it easy to insert.

The catheter also filters out the secondary rays produced in the brass screen. For treating the cervix alone or the vault of the vagina after hysterectomy, the tubes are placed in twin formation.

Everything should be done especially, the same as preparing for a gynecological operation.

I generally give from 600 to 800 milligram hours at one exposure, giving three or four exposures in as many days. Milligram hours means amount of radium measured in milligrams, times

the length of time of exposure. Fifty milligrams for an hour would be 50 milligram hours. For twelve hours—600 milligram hours, etc. Therefore the patient gets 2,000-3,000 mg. hrs. as an initial course. X-rays are also given in conjunction with radium during the same course of treatment.

The patient is given six to eight treatments of x-rays to the regional lymph glands, by the cross-fire method, using a different portal of entry each day.

In three or four weeks, depending on the severity of the case, the patient is asked to return, and goes through the same course of treatments if necessary. An internal examination is always made to determine any change in the size of the tumor mass, or to determine any recurrence.

I believe it is wise in carcinoma of the uterus, either operable or inoperable, to continue the course of treatments for a few times even after it has all seemed to have cleared up, because a clinical cure certainly does not mean an anatomical cure and cannot be proven as such for a long time.

Others use many times the number of x-ray treatments that we do, but we think the destruction of glands obtained by fewer treatments is just as positive, although not as rapid as where many treatments are used.

Carcinoma of the uterus may be divided into three classes as they come to us for treatment. First, operable; where the cancer is confined to the cervix or body of the uterus and only moderately involving the parametria and vaginal walls. They are not fixed to the pelvic wall and usually cause no pain. Second, inoperable, those firmly fixed to one or both pelvic walls, those extensively involving the bladder, vagina or rectum, or those with general metastases. These cases have never been cured by operation alone. Third, recurrent cancers, such recurrence following operation and coming to us later for treatment.

The immediate beneficial effects consist of a diminution of the discharge and a decrease in the size of the tumor mass. The discharge, which at first was thick and foul, becomes thin and watery or disappears entirely. This gives the patient more subjective relief than anything else, and tends to encourage them in the treatment. A case like the following is a very good example, the first patient we treated.

Mrs. S.—Aged sixty-six, house No. 22,866, entered hospital September 22, 1917. Diagnosis: Adenocarcinoma of the body of the uterus. The history is that of a slight flowing for three years, but much more profuse the last year. For the last six months

she has also had considerable pain in the lower abdomen. The discharge is now thick, bloody and very foul. An attempt at vaginal hysterectomy was made on September 25, but the whole area was found so diseased that the uterus was simply pulled off in lumps of tissue by the forceps, and clamps were applied to control the hemorrhage, suturing being impossible. I might say here, that in these inoperable cases we now prefer the cautery to hysterectomy. On October 25 we began radium treatment, giving 2,000 mg. hr. to the vault of the vagina. A course of x-ray treatments were also given. Her blood count at the end of treatment showed 80 per cent hæmoglobin (corrected) and 4,080,000 red corpuscles. Her weight was seventy-four pounds.

We advised her to come back in three weeks to continue the treatment, but we doubted very much if she would because she was very discouraged about her condition. The patient, after going home, picked up very well, gained weight, felt good, was free from pain, had been walking for six weeks, the discharge had ceased, and we had a difficult time to convince her that she was not absolutely cured. In fact, it was only by persistence that we were able to get her back in January for further treatment.

As regards the decrease in the size of the tumor, I will describe the following case.

Mrs. U.—Aged forty-five years, house No. 22,056, entered hospital first on July 26, 1917. Her history at that time was as follows: About January 1, 1917, she began to have a bloody discharge mixed with a thick mucopurulent material. May 1, this became very foul, and the patient began to have backache and pressure symptoms on the bladder. A supra-vaginal hysterectomy was performed on July 27, and the pathological report was squamous celled carcinoma of the vaginal vault and cervix. The patient continued to have a thin yellowish discharge up till December 14, 1917 and then had a rather profuse hemorrhage while asleep. After this the discharge was bloody. Since her operation she had had considerable backache and pain in her left hip. She returned to the hospital December 19, 1917, with the above symptoms. Vaginal examination then revealed a cauliflower mass about the size of a hen's egg, extending down from the vault of the vagina. A finger could be passed all around this up to the vault.

Blood examination and urine were normal. She was given an initial course of 1525 mg. hr. and three x-ray treatments and told to return in a month. Upon return, an examination showed that the whole mass had disappeared and the vault of the vagina showed only slight thickening. She had had no discharge except for one day, having then a rather severe hemorrhage immediately after inserting a douche point. She therefore must have absorbed this mass, as her constitutional symptoms would indicate. She had a constant headache, loss of appetite, diarrhea and straining on urination. However, she had an acute coryza and pharyngitis at the

same time and how much the symptoms were due to this we cannot say.

The untoward reactions of radium are a burning sensation in the vagina, bladder or rectum, or a slight nausea with anorexia and lassitude. At times this may become much worse and the patient has an actual tenesmus in the bladder or rectum with diarrhea, loss of weight, severe nervousness and hyperhexia. These usually all show up within three weeks. Other dangers to the patient consist in sloughing, due to too strong action, thrombosis and even hemorrhage by opening up large vessels such as the uterine artery. However, by proper screening and application of the radium, most of the lesser and practically all of the graver dangers can be avoided.

The results obtained are classed into four groups. First, anatomical cure, which means a complete destruction of carcinoma cells, so that no recurrence can take place. This is only demonstrable after the so-called five year limit is passed. Second, clinical cure, which means a complete disappearance of cancer so far as palpation, curettage or other methods may disclose, along with an apparent perfect general health of the patient. Third, improved, in which there is a decided betterment in the patient's condition. This may consist of a disappearance of pain, or a cessation of hemorrhages and discharge. Fourth, unimproved, in which there is no betterment in the patient's condition. The pain and discharge continues, while locally there might appear to have been even some histological improvement.

Our results are very encouraging, although we have only treated five cases of carcinoma of the uterus up to the present time. These included two basal-celled carcinoma, one adeno-carcinoma and one squamous-celled carcinoma, as described above. One basal-celled cancer was operable and is alive now with no signs of recurrence four months after beginning of treatment. The other basal-celled cancer was a hopeless case, having general metastases and has died, but even in her we were able to clear up the very foul vaginal discharge and make life more comfortable for her and for her relatives who cared for her.

The adenoma-carcinoma woman is alive now and feeling well with no untoward symptoms seven months after beginning of treatment. She was a strictly inoperable case. The squamous-celled cancer was a recurrent cancer and the woman is alive after four months of radium treatment.

As these cases have not been treated long enough, and as our series is small, the above results do not amount to very much. However,

they prove that the immediate help in all cases except those with general metastases, is very promising. I would say at this time that two of the cases living are improved and the adeno-carcinoma clinically cured.

I have not included in our results one case of recurrent cancer, forming a mass as large as a grapefruit, filling the pelvis and pressing much on both bladder and rectum. We have only had time to give her one course of treatment so far.

The results that have been obtained in most large clinics, where radium has been at work for years, are very promising, although not absolutely conclusive of the curative action of radium.

Kelley and Burham have reported as follows, up to November, 1915. Fourteen operable cases, ten of which were operated upon. Two of these were well for three years—one for two years, four for one year, and three for six months: The other four not operated upon, because of some other condition—two well for over three years and two for over one year.

This is very encouraging when we consider that 75 per cent. of all cases show recurrence, and that 60 per cent. show recurrences within the first year.

In the combined report of the inoperable and recurrent carcinomas, 199 cases were treated. Of these, 53 were clinically cured, 109 markedly improved, and 37 were not improved. Of the clinically cured, one was for over six years—three over four years—four over three years, five over two years, twenty-nine for one year and fifteen for six months.

Schmitz⁸ report of August, 1916, was as follows: In inoperable cancers, eleven of thirty-five were clinically cured. The time elapsed in these cases was from two to twenty-four months. In the recurrent carcinomas, four of fifteen were clinically cured. Three of the fifteen were in a hopeless condition from the start. The time elapsed here was from two to ten months. He does not give his statistics in the operable carcinomas, but credits their beneficial result to surgery and says that radium purely influenced the favorable result.

Ewing⁹ records the statistics of Cheron and Rubens Duvol, Doderlein, Scherer and Futh and Ebeler.

Cheron and Rubens Duvol report 158 cases of uterine carcinoma, mostly inoperable, in which ninety-three showed marked remissions. Seventy-seven of these were complete, and of these, twenty-two remained complete from one to four

8. Schmitz, Henry, Value of Radium in Pelvic Cancers, Surgery, Gynecology and Obstetrics. Vol. xxiii, p. 191.

9. Ewing—Radium Therapy in Cancer. Journal A. M. A., 1917, lxviii, p. 1238.

years. Fifteen more were clear for less than one year. They had thirty-one local recurrences, chiefly among those cases first treated, while twelve became operable and were operated upon.

Doderlein reports 153 cases of which 31 patients he regards clinically well one year or more after cessation of treatment.

Scherer reports forty-eight of fifty-eight uterine cancers treated by operation and radium combined, and free from recurrence after three years.

Futh and Ebeler report complete clinical regressions in all of ten operable cases and in six of thirteen inoperable cases.

Clark in November, 1916, reported forty-six cases of inoperable cancer of uterus and vagina which were alive after one to twenty-two months of treatment, while thirteen died in from one to eleven months.

Flatau¹⁰ has not operated on uterine cancer since 1913, claiming that the proportionate number of women still living and cured under radiotherapy alone, is larger than he could ever report before with abdominal operation.

The combined results of these men show that about one out of four cases of inoperable carcinoma are clinically cured, in time ranging from one to six years. In the operable carcinomas, about three of our four show clinical cures after the same length of time. It will only be after these cases are followed a few years longer, that absolute conclusions may be arrived at. However, we can say positively that radium surpasses anything within the physician's means in the improvement or cure of inoperable carcinoma uteri.

In the operable cancer it is best to do a simple vaginal hysterectomy and follow it up with radium in a few days. The reasons for this are, first, the operation itself may cure the patient, second, that radium does not cure all cases of cancer, and third, that we stand the double chance of curing the patient.

In the inoperable carcinomas it is best to excochleate and use the cautery. First because of a decided reduction in the extent of new growth; second, a corresponding increase of penetration of the rays; third, that the radium may be placed nearer the margins of the new growth.

Some operators prefer to treat an inoperable carcinoma with radium first, and later do a hysterectomy. This is sometimes a very uncertain procedure, because after tissues have been treated with radium, there is always more or less scar formation, and retraction of tissues, especially around the blood-vessels, and a hysterectomy at

such a time is always difficult and dangerous on account of hemorrhage.

CONCLUSIONS

The use of radium as a therapeutic remedy in the treatment of carcinoma uteri, depends upon a proper technic in its application.

Radium is the best agent known for inoperable cancer uteri.

The action, however, is not specific enough to warrant the use of radium as the primary therapeutic agent in carcinoma uteri.

In cases where surgery is contra-indicated, radium will improve the subjective and objective symptoms, even if not producing a cure.

Radium should also be used in border-line cases, because the permanent cures are not numerous or certain from operation.

I want to express my appreciation here, to Dr. W. R. Whiteis, who suggested the subject, provided me with the cases treated, and for his kindly interest and help in the work.

MEDICAL SCHOOLS WILL ARRANGE FOR CONTINUOUS SESSION

Every activity having to do with the war and after the war are speeding up in every way consistent with efficiency. We are constantly expressing our surprise that our enemies have held out so well without disorder or disarrangement.

We forget that Germany was prepared for all the things that have happened. She has no doubt been disappointed in the resistance offered and in the efficiency so rapidly developed by the Allies.

We doubt if Germany has been moved by humanitarian principles in providing for her wounded but by a desire to conserve her man power for the country's use. With us the cause of humanity comes first and for this reason the government is attempting to provide a sufficient number of medical practitioners to provide for the Army and for the civil population. We must not forget the near future; and there must be a supply of medical men from the medical schools better trained than the average doctor in civil life for military service, and release many medical men from the Army who are better prepared to serve the general public than to meet the more exacting requirements of government service. The medical schools are asked to hold together their teachers as far as possible, to maintain efficient teaching, and thus prepare students for government service. The Iowa University School of Medicine is endeavoring to meet this requirement by continuous sessions and we sincerely hope every influence will be brought to bear to induce every registered medical student to wait patiently until he has completed his professional studies before he undertakes to enter military service.

10. Flatau, S.—Surgery, Gynecology, Obstetrics, Sept., 1917.

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa

Publication Committee

D. S. FAIRCHILD.....Clinton, Iowa

W. L. BIERRING.....Des Moines, Iowa

C. P. HOWARD.....Iowa City, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa

T. E. POWERS.....Clarinda, Iowa

W. B. SMALL.....Waterloo, Iowa

SUBSCRIPTION \$2.00 PER YEAR

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII

July 15, 1918

No. 7

SURGEON-GENERAL GORGAS

On October 3rd, General Gorgas will reach the age of 64 years, when according to law, he will be automatically retired from military service. The retirement of General Gorgas as the head of the medical service of the United States Army at this time, is of such serious import that we stop for a moment to consider the value of his services to the world. It is doubtful if more than one man in the history of medical science has done more in the interest of humanity than General Gorgas. Pasteur, the great French chemist, laid the foundation for all knowledge on infectious diseases. It was given to many other men to work out special things. To Lister it was given to work out the relation of infections to surgery; to Major Read and his associates, the transmission of yellow fever and malaria, and to General Gorgas, the manner of control of transmission. Many things have been built on the foundation laid by Pasteur, and many men have contributed, but none so important as the prevention of transmission of disease where great bodies of men or even entire nations are concerned, and by this means, gaining the sympathy and support of the governing powers and the masses of the people. This has been the function of General Gorgas; he has pointed out and demonstrated in so many instances that are fresh in the minds of all classes. To General Gorgas is attached that rare gift of impressing on the minds of all his associates, co-workers, and the entire medical profession, his fitness,

scientific ability, his absolute honesty and patriotism and freedom from personal ambition and self-aggrandisement, that there is left but one sentiment among the American people, and that is no other man can at this time fill his place. There are many able surgeons in the military service, it is true, but men of genius possessing so many qualities possessed by General Gorgas, are only the product of a century. Added to the qualifications enumerated are those of courage and steadfastness which enables him to hold the respect and confidence of the high governing officials and to hold firmly at the front those great fundamental principles so essential to the health and physical efficiency of armies; a fact which should not be overlooked at this time.

General Gorgas will be only 64 years old October 3, 1918. He is now in the midst of his greatest usefulness, vigorous in body and mind and able to perform the most exacting service. It is not too much to say that the continuance of his services would contribute more to the morale of the medical arm of the Army than anything the Government could possibly do. It is to be sincerely hoped that President Wilson will see his way to continue General Gorgas in his present position during the period of the war, as one of the war necessities which he has so often been called upon to meet.

RETIREMENT OF GENERAL KEOGH

The British War Office has recently issued a communication announcing the retirement of Surgeon-General Sir Alfred Keogh from the position of Director-General of the British Army Medical Service:

"It is with great regret that the Secretary of State for War has decided that the time has come when Surgeon-General Sir Alfred Keogh, G.C.B., M.D., F.R.C.P., Director General of Army Medical Services, must be permitted to resume his duties as General Executive Officer to the Imperial College of Science and Technology, and he will be replaced at the War Office by Colonel T. H. J. C. Goodwin, C.M.G., D.S.O., Royal Army Medical Corps, until recently the Assistant Director of Medical Services to the British Recruiting Mission in America, who will be appointed Acting Director-General of Army Medical Services.

"Sir Alfred Keogh's services were placed by the Government of the Imperial College of Science and Technology at the disposal of the War Office at the beginning of the war, and

although during the last three years they have on several occasions requested that he should return to his former duties, owing to the development of matters of great national urgency which are delayed by his absence, it has not hitherto been possible to spare him.

"Sir Alfred Keogh was born in 1857 and received his professional education at Queen's College, Cork, and Guy's hospital, London. He took the degrees of M.D. and M.S. at the Royal University of Ireland in 1878. After holding the appointment of house-physician at the Brompton Consumption Hospital he entered the medical department of the army in 1879, coming out second of nearly seventy successful candidates. This was the first batch of officers commissioned under the Warrant of 1879. For a considerable time before that the discontent in the service had been so acute that there had been the greatest difficulty in getting suitable men to come forward. At Netley Sir Alfred Keogh won the Martin Memorial Gold Medal and the Herbert Prize and passed out with the highest total of marks of all the candidates—army Indian and naval. His first tour of foreign service was in Bermuda, whence he proceeded to India. On his return he was on duty at the Royal Arsenal, Woolwich, for five years; during that period he gained a large surgical experience. On completion of this appointment in the beginning of 1894 he was sent to India, where he served in the Madras Presidency; later he was transferred to Barrackpore, near Calcutta, where he was in charge of the Military hospital. He was also civil surgeon there, and in that capacity had large opportunities of ordinary professional work among the operatives in the factories and civilian population. He returned to England in 1899, and in November went to South Africa as Secretary and Registrar of No. 3 General Hospital, which was at Rondebosch, near Capetown, in the early part of the war. When Bloemfontein was taken, hospital accommodation was required on the lines of communication, and Colonel Keogh was sent to Springfontein with half of No. 3 General Hospital, and while there he was for a short time principal medical officer of the lines of communication from Bloemfontein to Norval's Point.

"He was soon transferred to Pretoria to take charge of No. 2 General Hospital, which he raised to a high state of efficiency. In November, 1900, it had 1,000 beds, and this number was maintained till the following March. He was also Senior Medical Officer of Ho-

witzer Camp, which included the Langman Hospital, and direction of the sanitation of the eastern outskirts of Pretoria. At the end of 1900 he contracted enteric fever, and was invalided home in February, 1901. He was mentioned in Lord Robert's first dispatch, received the decoration of C.B., and was specially advanced from the lower to the higher rate of Lieutenant-Colonel.

"When the reform of the Medical Service of the Army was undertaken, he was invited to join Mr. Brodrick's Reorganization Committee. His work as a member of that was of the highest value. He was appointed Deputy Director-General from January 1, 1902.

"On January 1, 1905, he was appointed Director-General and retained that office until 1910, when he was appointed Rector of the Imperial College of Science and Technology, South Kensington. During his first period of office as Director-General the medical service of the Territorial Force was organized, and the system of Territorial hospitals with staffs drawn from the civil hospitals in the various localities was brought into existence."

VOLUNTEER NURSES' AIDS

At the annual meeting of the General Medical Board held at Washington on May 5th, a brief summary was presented of the situation regarding nurses by Lieutenant Colonel William H. Welch, of Johns Hopkins University. He stated that there were about 83,715 graduate nurses registered in the United States, 14,387 more would be graduated this spring, making a total of 98,162. About 9,000 had already entered the service; about 3,000 of these were either abroad or under orders to proceed abroad, and about 24,000 would be needed to supply the needs of the present army in action on the battle front. To keep up the supply about one thousand trained nurses a month would be required. But our schools only turn out about 11,000 graduates annually.

Moreover, we are now told that a million additional troops are to be put into the field as soon as they can be called and mobilized, making a total of approximately three million men under arms. This would require an additional hundred and fifty thousand hospital beds, making a total of four hundred and fifty thousand. To care for hospital organization on such a scale, fifty thousand trained nurses would be required.

It will be seen from the above that at best

there will be a great shortage of nurses, for there can be no doubt the three million of men will soon be under arms. It has been proposed that young women of good intelligence and education at once enter local training school for brief periods and secure such training as time will permit to serve as aids to full trained nurses.

Dr. S. S. Goldwater, chairman of the war service of the American Hospital Association believes by such a plan a total of 25,000 could be trained by the first of next year.

In view of the intimations recently made in certain quarters as to defects in administration of the army medical department in France, interest and importance attaches to a personal letter received from Major Hugh H. Young, of Johns Hopkins University, director of the division of urology, of the American expeditionary force.

Major Young says that things are moving satisfactorily, but slowly. "We are gradually getting a wonderful system of hospitals and the medical organization of the army is proceeding apace. So far, there is not much surgery, and every one has been most concerned with the infectious diseases, of which there has been plenty, as in the United States. The respiratory infections have been particularly fatal, and there has been a great deal of diphtheria, measles, mumps, etc., and spinal meningitis. The venereal situation is really remarkably good. The rate has remained between three and four per thousand for several months, and some organizations have been almost entirely free from infections. The Forty-second division, for instance, only had one new case reported during the month of December, and only four in February, with 26,000 men. At least six of the base hospital contingents, each containing about 200 men, have not had a single case of venereal disease in the contingent since leaving the States from six to ten months ago. The prophylactic and educational methods which have been adopted and carried out in great force have been very effective, and putting the houses of prostitution out of bounds also had great results."

Warning that the country should be prepared for death casualties in probably increasing numbers as a result of gas attacks in France is being given by the army medical authorities. Despite improvement in gas masks and anti-gas warfare, casualties are the result mostly of sur-

prise attacks, which have been launched on such great scale that mortars and similar gas shell implements have been fired in such perfect unison that fifteen tons of gas have been in the air at one time over a few hundred yards of front. When this falls into the trenches, there is necessarily excitement among the men, many of whom do not get their masks in position in time, although it is a part of the training that they must have the masks in place within six seconds.

It is interesting to know that the Germans figure that in a gas attack of considerable dimensions there should be at least ten per cent. of casualties. The British have nothing like that number, being better protected than the Germans. In the meantime, at home, work is progressing satisfactorily on the manufacture of gas masks, although some difficulty has been experienced in obtaining certain chemicals, for one of which it may be necessary to go to Trinidad or the Philippines.—*New York Medical Journal*.

THE HEALTH OF INDUSTRIAL WORKERS

The time has come when all civilized nations must take seriously into consideration the welfare and efficiency of man power. In all directions we hear the cry of "Safety First." This so far as we are concerned means safety against accidents which has a direct financial bearing with much less consideration for the health of operations. The British Health of Munition Workers Committee cogently observed that "Without health there is no energy; without energy there is no output." At this particular time, as never before, the demand for speeding up to the fullest capacity and perhaps for a considerable period of time, places a burden upon the industrial classes that will test their power of endurance to the uttermost.

In England before the war many wise regulations existed to conserve the health of workmen in factories, but fell far short of being sufficient to meet the conditions when war came, and many new and inexperienced men and women were pressed into the services of industries necessary for war purposes, and the speeding up, and long hours, could not at first be met by adequate sanitary supervision, when the evidences of impaired health and energy became apparent and serious effects on the output were apprehended. New regulations were now put into force with a material improvement in the health and in the productive power of operatives.

We had been comparative strangers to measures for increasing the producing energy of workmen by health and sanitary measures until about the beginning of the war and when the greatly increased output for overseas use became so urgent, we were familiar with only one remedy, and that was increase of wages. It is true many industries had already considered the efficiency of their employers and some had advantages of health and sanitary regulations in increasing the efficiency of their employes and some had gone so far as to provide full time medical supervision with a recognized gain in efficiency. But until quite recently no systematic plan has been considered and even now we are far short of what has been done in Britain. In Pennsylvania, New York and Massachusetts, where great industries have been developed, a considerable number of full time specially trained physicians and surgeons are employed to look after the health and welfare of employes. Some of our large department stores have taken up the same work. While in Iowa we have no great industrial plants to consider sanitary regulations, we have many municipalities, that sadly need health supervision, and its economic value cannot be less than in the industries. The medical profession has consistently urged cities to employ independent and competently trained full time medical advisers, and when it is shown that large cantonments of soldiers have actually less sickness than home cities, a certain enlightenment will come as to the value of medical service in health conservation. The unfortunate condition of affairs is abundantly shown in the great number of infection carriers who appear from various parts of the country at the cantonments and much of the sickness and many of the deaths are more or less directly due to infection brought from unprotected communities, and in time there will be collected data that will arouse people to the unseen and unnecessary dangers which surround them at home.

SMITH COLLEGE UNIT

The American college girls of the Smith College unit have displayed conspicuous bravery in attending the wounded and civilians under fire during the recent German advance. The girls have been engaged in the work of rehabilitation in the Somme district. Because of the advance of the enemy, they have been forced to retreat to Verlaine and Esmerly-Hallon, where they have rendered admirable service in the care of old refugees and children.

During the German drive, the unit lost its entire equipment, with the exception of three motor cars. The girls have been praised especially for their work just before the Germans reached Ham. They not only evacuated their own villages, but assisted in the evacuation of the Nelse Hospital. As soon as they reached Montdidier, a coffee station was improvised, and a temporary children's hospital was installed in a hotel.

Later the Red Cross asked for helpers for Amiens, and five of the girls were chosen. During their first night, the town was bombed again and again by the Germans. Half of their time was spent in cellars and the other half in rendering what services they could to the civilians. Finally, the girls were forced to move to another town, where they offered their services to the French authorities and helped to feed the wounded who were passing through the town. While awaiting further opportunities to be of service, the girls have been engaged especially in visiting English-speaking wounded in several of the hospitals, giving them cigarettes, writing letters for them, and attending to their wants.

The girls have worked hard and have been in constant danger, but all declare that they would gladly begin the work all over again.—*New York Medical Journal*.

LIEUTENANT-COLONEL JOHN McCRAE

The American Medical profession has suffered a serious loss in the death of Dr. John McCrae, who died in Wimereux, January 28th, of a malignant type of pneumonia, after an illness of four days. Dr. McCrae will be remembered by the profession as joint author Adams and McCrae's Text Book on Pathology.

He served in the Boer war with distinction as a combatant.

Lieutenant-Colonel McCrae was born in Guelph, Ontario, took B.A. and M.B. degrees at Toronto graduating in Medicine in 1898. After graduating he studied and worked with Professors Welch and Osler at Johns Hopkins and in London, where he received the degree of M.R.C.P. In 1902 he became associated with Professor Adami as Fellow in Pathology at McGill and Assistant Pathologist to the Royal Victoria Hospital. In 1905 he became associated with the chair of Clinical Medicine.

When war was declared he was on his way to London and on the arrival called back an offer of his services. He immediately returned to Canada and was assigned M.O. to the First

Brigade of Field Artillery, went with them to Valcartier and crossed with the first contingent. Served with distinction in the second battle of Ypres.

In May he was recalled to base to assume the duties of Lieutenant-Colonel in charge of the medical side of No. 3 Canadian General Hospital. Dr. McCrae was at one time associated with the American Journal of Medical Sciences. Dr. McCrae had a wide knowledge of English and French literature, history, biography and especially military history, in which he was peculiarly interested. He was an artist of considerable ability and had traveled extensively. As a poet he had gained considerable prominence. Two poems will be especially remembered which we copy. The sentiment, the times and his own dramatic history and death will carry the memory of this medical hero far into the future.

IN FLANDERS' FIELDS

In Flanders' fields, the poppies blow
Between the crosses, row on row,
That mark our place; and in the sky
The larks, still bravely singing, fly,
Scarce heard amid the guns below.

We are the dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved and were loved; and now we lie
In Flanders' fields.

Take up our quarrel with the foe!
To you, from failing hands, we throw
The torch. Be yours to lift it high!
If ye break faith with us who die
We shall not sleep, though poppies blow
In Flanders' fields.

THE ANXIOUS DEAD

O guns, fall silent till the dead men hear
Above their heads the legions pressing on;
(These fought their fight in time of bitter fear
And died not knowing how the day had gone.)

O flashing muzzles, pause and let them see
The coming dawn that streaks the sky afar;
Then let your mighty chorus witness be
To them, and Caesar, that we still make war.

Tell them, O guns, that we have heard their call,
That we have sworn, and will not turn aside,
That will onward till we win or fall,
That we will keep the faith for which they died.

Bid them be patient, and some day, anon
They shall feel earth enwrought in silence deep,
Shall greet in wonderment, the quiet dawn,
And in content may turn them to their sleep.

SELECTION OF CANDIDATES FOR AIR SERVICE

Much attention is being given by the British Medical Services to the selection of men for the air service. Dr. H. Gream Anderson of the British air service in a paper before the London Medical Society, March 11, 1918, outlined the qualifications for aviation service and the general character of the medical examinations. It was confessed in the paper and the discussion which followed that no medical examinations could determine fully the fitness for the service. It has been found that in unexpected instances men have developed a high degree of efficiency. It is apparent that the Psycho-Motor Reactions are the most important after a physical examination and the most difficult to measure. It is important that the aviator should possess normal reaction times with regard to vision, hearing, and touch. All parts of the reflex arcs involved must be intact. These reaction-times are tested by means of the D'Arsonval chronometer, which determines accurately at what fraction of a second, after having received a visual, auditory, or tactile stimulus, the candidate under examination reacts. A slow reaction time, the delay of a second, or part of a second, in correcting an error in the air or in landing may mean all the difference between a crash and safety. The candidate for the air service should be between 18 and 30 years. Under 18 and up to 20 caution and well balanced judgment may be lacking, 24 is about the best age. Over 33 the candidate, although quite able to learn to fly, does not stand the nerve strain or air work well. The candidate should not be under 5 feet 2 inches. History of injuries is important, also previous occupation, habits and mode of life. As a general rule those whose previous occupation has been of out-door nature, and those who have been accustomed to playing out-door games make the better aviators. Dr. Anderson made an inquiry into the candidates' habits in relation to tobacco and alcohol. Most flying men smoke a great deal and very few are strict teetotalers. Dr. Anderson believes that excess in smoking leads to palpitation, shortness of breath and in some cases double vision and that excess in alcohol will ultimately beat him. "I have seen an aviator fly under the influence of alcohol and yet by instinct perform aerial stunts, although considering the age and type of machine his judgment in so doing was distinctly below par." Of these dangers the aviator should be thoroughly warned. The family history should be good.

Vision and hearing should be normal in both eyes and in both ears. His color vision and color perception should be normal and quick. The total examination in general is the same as for the navy.

So complicated are the conditions of aviation, that especially trained medical officers should live with the flyers to watch for and detect any deviations from health, to advise and direct habits of living, to determine questions of fitness and to transfer unfit men to other branches of service.

MEDICAL WOMEN IN THE WAR

The highest type of patriotism has been shown by American Medical women; one-third or more of the educated women doctors of this country have enlisted, many in Europe, where their services are invaluable in rendering medical service to women and children in devastated sections. They have rendered great service in laboratories and hospitals as anesthetists. When we think of the 2,000 women doctors in the volunteer medical services of their country we wonder where the 80,000 men doctors are who are not accounted for.

GOVERNMENT SUPERVISION OF MEDICAL SCHOOLS

It is almost too strange to believe that the medical schools and the medical profession have accepted with approval government supervision of medical teaching in the United States. This of course has grown out of war necessity. The present and the future needs of the Government in providing for the best health conditions for the army and navy and for the care of the wounded soldiers has so impressed itself upon the attention of the heads of these great services that no risks will be taken. Not only have the medical service of the Army, the Navy and the Public Health Service held advanced views but they have had the sympathy and support of the Federal Administration. Contrast this with the attitude of the Secretary of War in 1861. Added to this the co-operation of the leaders of the medical profession in all parts of the country. The medical schools so far as we know have come forward with the offer of all their resources in support of the government and have accepted without protest all that has been demanded of them even to the standardization of their work under government control. The most optimistic and patriotic could not ask for more. To bring about the fullest co-operation a special division of the Surgeon General office has been created under the charge of Major H. D. Arnold of Boston which is to oversee

the work of the students enlisted in the Medical Reserve Corps under the selective service act. This provision will furnish to the Army and Navy a supply of thoroughly trained young medical officers for general service, an important fact overlooked by the British Government which is now seriously feeling the effect of this oversight. Furthermore the effect of government supervision will have an immense influence on the Medical schools. The great work of the Council of Medical Education had laid the foundation for this important undertaking and made the transition from private and state supervision to Federal supervision comparatively easy.

The National Committee on Medical Education and Licensure will have an influence which could not have been foretold at the time of its organization on the future of medical education and on standardization and co-operation. It seems like a dispensation of Providence that such needful coincidents come together at this time.

We are prepared to believe that in the future government activities will be important factors in the control of Medical Education and Licensure.

THE 1918 SESSION OF THE AMERICAN MEDICAL ASSOCIATION

Chicago may be said to be the center of the Medical activities of the United States and therefore of the world. This high place has not been reached without a struggle and many disappointments. Its central location in the rich and populous Mississippi valley has been the most important factor. Chicago left to its own resources would probably not have reached its present position of influence but by common consent there has been a gravitation and friendly co-operation of medical influence from centers which have made wider contributions than Chicago. In spite of many adverse circumstances Chicago through a group of patriotic and highly intellectual physicians and surgeons have added sufficient prestige to medical progress to fairly entitle this great city of the middle west to the high place accorded her. It was therefore with no hesitation that a year ago the profession agreed to meet in Chicago to consider momentous questions which were sure to arise in this most trying period in the Nation's history. It was not difficult to understand in 1917 that another year would find us more deeply involved in a struggle which would try our resources to the uttermost, when the medical profession would be called upon to make the greatest sacrifice. If there was any doubt as to the willingness of the profession to make the sacrifice or as to their loyalty to their country the doubt was cleared up at this meeting. The association in every way asked the government to point out what the needs were and how the members could most contribute to the country's wel-

fare. In the election of officers Dr. Alexander Lambert and Admiral Braisted were the leading candidates. Dr. Lambert was elected by a majority of three. It was felt that the association was a civilian body and believed that as such it was logical that they should be led by one of their own class to perform such duties as might be pointed out by military leaders. The distinguished services rendered by Admiral Braisted were recognized and appreciated and when once more the medical profession returns to civilian activities. Admiral Braisted will be the unanimous choice for the highest honor the profession can confer on a great military leader.

IOWA MEDICAL MEN IN THE WAR

To Camp Dodge, Des Moines, Ia., base hospital, Capt. Arthur H. McCreight, Fort Dodge; for duty, Lieut. Malcom S. Campbell, Malvern.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Camp Logan, Lieut. Raymond H. Munford, Dodge City.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. Colin C. Thomas, Monticello; William N. Gordon, Rowan.

To Fort Riley for instruction, Lieut. John T. Hanna, Kellogg.

To Long Island, City, L.I., N.Y., for duty, from Camp Wheeler, Lieut. John D. Hexon, Decorah.

To New Orleans, La., Tulane University, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Riley, Lieut. Dan L. Mahoney, Dubuque.

Tuscaloosa, Ala., University of Alabama, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Oglethorpe, Lieut. George E. Steele, Belmond.

The following order has been revoked: To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Lewis, Capt. Marcus C. Terry, Jr., Brighton.

To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. George R. Narrley, Keokuk.

For duty, from Camp Grant, Lieut. Frederick W. Sallander, Fort Madison.

To Camp Dix, Wrightstown, N.J., as division psychiatrist, from Camp Stuart, Capt. Samuel C. Lindsay, Independence.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Jefferson Barracks, Capt. Albin B. Phillips, Clear Lake; from Camp Logan, Lieut. Benjamin C. Hamilton, Jr., Jefferson.

To Fort Sam Houston, Tex., as orthopedic surgeon, from Jefferson Barracks, Capt. Charles B. Taylor, What Cheer.

To Manila, Philippine Islands, Philippine Department, for duty, from Fort McHenry, Major

Charles E. Ruth, Des Moines.

To Camp Sevier, Greenville, S.C., for duty, from Camp Zachary Taylor, Lieut. Edgar A. Stewart, Salem.

To Camp Sherman, Chillicothe, Ohio, for duty, Capt. Elliott R. King, Letts. As orthopedic surgeon, from Fort Oglethorpe, Lieut. Ray R. Kulp, Davenport; base hospital, Lieut. Henry M. Lee, Decorah.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp Custer, Battle Creek, Mich., base hospital, Capt. Josiah R. McKirahan, Perry. On completion to his proper station, from Camp Custer, Lieut. Paul B. M. Kersten, Fort Dodge; from Camp Dodge, Capt. Christian H. Dewey, Perry; Garner F. Parker, Pochontas; Lieut. Joseph L. Ruyavitz, Duncombe.

To Fort Riley for instruction, Lieut. Audley E. Nelson, Sidney.

To Hoboken, N.J., for duty, Lieuts. Walter Frazer, Algona; Clarence H. Doty, Center Point; Henry L. Gardiner, Gueyden; from Camp Logan, Lieut. Fisher B. E. Miller, Cherokee; from Camp Zachary Taylor, Lieut. Frank H. Gaffey, Bradgate.

To Pittsburg, Pa., Carnegie Bldg., for instruction, and on completion to his proper station, from Camp Beauregard, Lieut. Merle Bone, Albion.

To the inactive list, Capt. Leo E. Evans, Waterloo.

To Camp Forrest, Chickamauga Park, Ga., for duty, from Camp Sherman, Capt. Herbert W. Plummer, Lime Springs.

To Camp Hancock, Augusta, Ga., base hospital, Capt. Charles B. McGlumphy, Iowa City.

To Camp Pike, Little Rock, Ark., for duty, Capt. James A. Hull, Ottumwa; Lieut. Benjamin L. Meigs, Fort Dodge.

To Portland Ore., Yeon Building, for duty, Lieut. Martin L. Hooper, Indianola; Frank W. Mills, Ottumwa; Frederick H. Graber, Stockport; Everett E. Richardson, Webster.

To Camp Greene, Charlotte, N.C., base hospital, from Army Medical School, Lieut. Fred W. Niehaus, McClelland.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieuts. John L. Marker, Centerville; Ralph Lovelady, Sidney.

To Fort Oglethorpe for instruction, Lieut. Isaac H. Odell, Des Moines.

To Mineola, L.I., N.Y., for temporary duty, and on completion to his proper station, Major Eugene R. Lewis, Dubuque.

To New Haven, Conn., for duty, from Camp Travis, Lieut. Milton D. Jewell, Decorah.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, David E. Kisecker, John C. McKinnon, Caldwell.

The following order has been revoked: To Army Medical School for instruction, Lieut. Earl C. Lightfoot, Mineral.

Minutes of the Iowa State Medical Society, Sixty-seventh Annual Session, Fort Dodge, May 8-9-10, 1918

Wednesday, May 8—Morning

The Sixty-Seventh Annual Session of the Iowa State Medical Society was held in the Ball-Room, Commercial Club, The Wahkonsa Hotel, Fort Dodge, May 8, 9 and 10, 1918.

The Society was called to order at 9:30 o'clock by the President, Dr. J. N. Warren, Sioux City. Following invocation by Rev. F. E. Drake, Fort Dodge, Dr. W. W. Bowen, Fort Dodge, on behalf of the city and for the profession, gave an address of welcome, to which response was made by Dr. M. J. Kenefick, Algona.

On behalf of the Society, Dr. H. C. Eschbach, Albia, presented to President Warren a gavel with which to exert authority during the present session, stating that not only would the instrument serve well that purpose, but that in after years it would always remain a token of the love and reverence of his fellow members.

Dr. Jennings Crawford, Cedar Rapids, read a paper on "Perineal Prostatectomy." Discussed by Drs. R. A. Weston, Des Moines; L. W. Littig, Iowa City; W. W. Bowen, Fort Dodge; P. B. McLaughlin, Sioux City, and H. J. Prentiss, Iowa City; Dr. Crawford closing the discussion.

Dr. Evan S. Evans, Grinnell, read a paper on "Foreign Proteids in Therapeutics." Discussed by Major Joseph L. Miller, Chicago; Drs. Walter L. Bierring, Des Moines, and O. F. Parish, Grinnell; Dr. Evans closing the discussion.

Dr. A. H. Byfield, Iowa City, read a paper on "Relationship of Respiratory Infection to Digestive Disturbances in Infants and Children." Discussion by Dr. Fred Moore, the essayist closing the discussion.

Dr. Lewis Schooler, Des Moines, gave an address on "The Doctor in the Army." (No discussion.)

Wednesday, May 8—Afternoon

The meeting was called to order at 1:30 o'clock by the President.

Dr. J. W. Kime, Fort Dodge, read a paper on "Some of the Newer Points in Relation to Tuberculosis." Discussed by Drs. H. V. Scarborough, Oakdale; John H. Peck, Des Moines, and Walter Fraser, Algona; Dr. Kime closing the discussion.

Papers comprising a Symposium on the Hematopoietic System were read, as follows:

"The Histologic and Etiologic Aspects of the Diseases of the Hematopoietic System," Dr. G. W. Koch, Sioux City.

"The Pathologic and Diagnostic Aspects of the Diseases of the Hematopoietic System," Dr. W. L. Sanders, Des Moines.

"The Modern Therapeutic Aspects of Diseases of the Hematopoietic System," Dr. F. J. Rohner, Iowa City.

The papers of the symposium were discussed by

Dr. Walter L. Bierring, Des Moines; Drs. Koch, Sanders and Rohner closing the discussion.

The Address in Medicine, on "Pneumonia and Its Complications at the Base Hospital, Camp Dodge," was given by Major Joseph L. Miller, M.O.R.C., Chicago.

Thursday, May 9—Morning

"The meeting was called to order at 9 o'clock by Vice-President M. J. Kenefick, Algona.

Dr. F. W. Cram, Sheldon, gave the Oration on Surgery.

Dr. J. T. McClintock, Iowa City, read a paper on "Some Results from the Experimental Study of Intestinal Obstruction." Discussed by Drs. O. J. Fay, Des Moines, and Walter Fraser, Algona; Dr. McClintock closing the discussion.

Da. M. H. Thielen, Gundy Center, read a paper on "The Solomon Strous Method of Treating Dropsy." Discussed by Dr. C. P. Howard, Iowa City.

Dr. C. P. Howard, Iowa City, Chairman of the Section on Medicine, read a paper on "Some of the Medical Lessons of the Present War."

In the absence of Dr. J. R. Walker, Fort Madison, his paper on "Myocarditis: Its Recognition and Treatment," was read by title and passed.

The Oration in Medicine was then given by Dr. W. L. Allen, Davenport.

Major D. J. Glomset, M. R. C., Des Moines, read a paper on "Control of Infectious Diseases in the Army." Discussed by Major E. T. Edgerly, M. R. C., Ottumwa; Drs. Henry Albert, Iowa City; Eli Grimes, Des Moines; C. P. Howard, Iowa City, and G. W. Koch, Sioux City; Major Glomset closing the discussion.

Dr. Harold Gifford, Omaha, Neb., read a paper on "The Etiology and Treatment of Institutional Keratitis with Special Reference to the Teeth." (No discussion.)

Thursday, May 9—Afternoon

The meeting was called to order at 2:00 o'clock by President Warren.

Dr. P. B. McLaughlin, Sioux City, as Chairman of the Section on Surgery, gave an address on "Hospital Standardization."

Dr. Emil Reis, Chicago, then gave the "Address on Surgery," at the conclusion of which a rising vote of thanks was extended to Dr. Reis.

Dr. William Jepson, Sioux City, read a paper on "Bone Surgery of the Skull." Discussed by Drs. O. J. Fay, Des Moines; J. A. Dales, Sioux City, and Chas. J. Rowan, Iowa City; Dr. Jepson closing the discussion.

Dr. Chas. Ryan, Des Moines, read a paper on "Bone Surgery of Upper Extremities." Discussed by Dr. Arthur Steindler, Iowa City, and Dr. Ryan in closing.

The Chairman announced that Mr. Ralph J. Reed, Secretary of the Iowa State Tuberculosis Society, wished to address the Society in regard to a proper course of training for army nurses.

Mr. Reed: In the absence of Mrs. Frances Whitley, Chairman for Iowa of the Women's Committee of National Defense, I wish to state that Mrs. Whitley has just received an announcement from President Jessup of the Iowa State University that the University has arranged for an intensive course in training for nurses which has been adapted to the plan of the course given at Vassar, for college graduates or girls in the two upper classes of colleges or universities. The idea is that this summer course will take the place of the several months' training usually required for the course, this matter of time being most important now because of the increased number of doctors soon to be called into the service. Mrs. Whitley hopes that all doctors will see this announcement, which is a very important one, gets to the people who can make the most use of it and best fill this gap.

Dr. C. S. James, Centerville, gave a talk on "Fractures Complicating the Joints of the Upper Extremities." Discussed by Drs. W. W. McCarthy, Des Moines; D. C. Brockman, Ottumwa; D. S. Fairchild, Clinton, and Chas. Ryan, Des Moines; Dr. James closing the discussion.

Dr. J. A. Dales, Sioux City, read a paper on "Plastic Surgery of the Nerves." Discussed by Drs. W. A. Rohlf, Waverly, and William Jepson, Sioux City; Dr. Dales closing the discussion.

Thursday, May 9—Evening

Meeting was called to order at 7:00 o'clock by Vice-President Kenefick.

Dr. J. N. Warren then read the President's Address.

Upon motion, the chair appointed the following named members to act as a special committee in considering the President's Address, and to report upon it at 10:00 o'clock Friday morning: L. W. Littig, J. W. Kime, and M. N. Voldeng.

Dr. J. C. Rockafellow, Des Moines, gave a talk on "The Bone Transplant in the Fixation of Fractures" (with lantern illustrations). Discussed by Drs. Fritz Rosenblatt, Council Bluffs; F. E. Sampson, Creston, and W. W. McCarthy, Des Moines, the essayist closing the discussion.

Dr. A. P. Stoner, Des Moines, read a paper on "Fractures Complicating the Joints of the Lower Extremities" (with lantern illustrations). Discussed by Drs. L. W. Littig, Iowa City; J. E. Brinkman, Waterloo; Walter Scott, Adel; T. M. Throckmorton, Chariton, and Joseph H. Schrup; Dr. Stoner closing the discussion.

Dr. Tom B. Throckmorton: Before the official publication of the program, the only individuals who indicated that their articles would be illustrated by lantern slides were the essayists of the evening. Consequently no provision was made for the daylight use of the lantern. Inasmuch as one of the essayists scheduled to appear on the program tomorrow morning has a paper which is profusely illustrated by lantern slides, and inasmuch as two essayists who appeared on the program this afternoon were unable to show their illustrations on

account of lack of lantern facilities, I move that the paper of Dr. Steindler be presented tonight, and Drs. Ryan and James be allowed to show the lantern illustrations accompanying their respective papers.

Motion seconded. Carried.

Dr. Arthur Steindler, Iowa City, read a paper on "Surgery of Tendons," illustrated by lantern slides. Discussed by Drs. J. W. Cokenower, Des Moines, and Chas. Ryan, Des Moines, the essayist closing the discussion.

Lantern slides illustrating the papers of Dr. Ryan and Dr. James were then shown.

Friday, May 10—Morning

The meeting was called to order at 9:00 o'clock by Vice-President Kenefick.

Dr. J. H. McGready, Independence, read a paper on "Plastic Surgery of the Face and Neck." (No discussion.)

Dr. H. J. Prentiss, Iowa City, read a paper on "Meso-tendons of Tendons of the Leg and Foot in Relation to Tendon Transplantation." Discussed by Drs. Arthur Steindler and M. J. Kenefick; Dr. Prentiss closing the discussion.

Dr. J. T. Strawn, Des Moines, read a paper on "The Diagnosis and Treatment of Peptic Ulcer." Discussed by Drs. W. R. Brock, Sheldon; A. E. Echternacht, Mason City; E. E. Morton, Des Moines, and H. J. G. Koobs, President, South Dakota State Medical Association, Scotland, So. Dak.; the essayist closing the discussion.

Dr. L. W. Littig presented report of committee on the President's Address, as follows:

"REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS"

"Your committee desires to congratulate both the President and the Society on the splendid address of its retiring chief officer. This address contains many valuable constructive suggestions worthy of more than passing notice, and from a rich choice the following are selected for special notice:

"That the low death rate in Iowa is strong evidence that the profession of the state is easily the peer of any in the country is universally accepted as true. That the high professional standing now prevailing will be immensely advanced by the return to civil practice of the medical men now enjoying the advantages of Army and Navy service is equally true. The intensive training many receive before they are sent to Camp or 'Over There' and the rigid medical military training in Camp Base Hospitals or Fields will make its beneficent influence felt in every field of medical endeavor, and will make for better hospitals and better service to the country.

"Our hospitals as at present conducted are in sore need of the services these men will render. Hospital records at present leave much to be desired. The 'red tape' and the 'paper work' incident to medical service will leave its imprint on habits and methods. They will make for accuracy and for

that attention to detail so sadly lacking in our hospitals at the present time and so necessary to secure the best results. These men will know how to write histories; they will acquire the habit of writing good history, and they will write them when they return, and they will induce others to write them. They will be a powerful impetus to hospital standardization.

"Uniformity in all the states in the method of compiling vital statistics is of prime importance. To secure the most desirable results a National Board of Health, as suggested by our worthy President, is absolutely necessary.

"The encouragement given, the systematic and persistent spread of popular, but reliable and accurate information in matters pertaining to public health will meet with the hearty approval of all.

"The standardization of the members of the medical profession is a consummation devoutly to be wished, but as difficult of attainment as it is desirable. However, your committee believes that efforts such as those of our President will bring nearer realization of this dream.

"Team-work in medicine undoubtedly will make for better service; but the most important member of the team will always remain the general diagnostician who appreciates and co-ordinates the clinical history, physical findings and laboratory reports.

"Your committee commends the suggestion that the expectant mother be given proper instructions pertaining to her own health and that of her unborn babe.

"In conclusion, your committee believes that this address will prove of very considerable aid in securing results visualized by the writer.

Respectfully submitted,

L. W. Littig, Chairman;

J. W. Kime,

M. N. Voldeng,

Committee."

Upon motion, the report of the committee was adopted.

The Secretary read the following letter from Dr. C. F. Wahrer, Fort Madison:

"Iowa State Medical Society, in Session at Fort Dodge. Greetings:

"My heartiest best wishes for a good and profitable session with kindest and cordial expressions of my congratulations for all present and sincerest regrets for my absence. I remain your colleague and frater,
C. F. Wahrer."

The Secretary also read a cablegram from Dr. J. F. Herrick, now in France, in which he sent greetings to the Iowa State Medical Society.

Report of the Transactions of the House of Delegates was then presented by the Secretary. Upon motion, unanimously carried, the report was adopted.

SUMMARY OF THE PROCEEDINGS OF THE HOUSE OF DELEGATES

The first meeting was held Wednesday, May 8th, at 4:15 o'clock P. M. Roll call showed the presence of 44 members and officers. The reports of the Secretary, Treasurer and various Committees were presented in regular order. The Society then adjourned, after which the delegates met in caucus and selected members for the nominating committee.

The Thursday morning meeting convened at 8:40 o'clock, there being 33 members and officers in attendance. The minutes of the previous session were read and approved. The request of the Dubuque County Medical Society that a charter be granted that body was granted. A resolution requesting the Committee on Constitution and By-Laws to harmonize some of the conflicting articles in the Constitution and By-Laws was introduced by Dr. L. W. Littig, and on being duly seconded, carried; a Special Session of the House was called by President Warren at 4:00 o'clock P. M., at which time the aforesaid Committee presented their report.

The Friday morning meeting convened at 8:30 o'clock, there being present 30 members and officers. The minutes of the previous session were read and approved.

After the report of the Committee on Nominations, ballots were taken and the following named gentlemen were elected to office:

See transactions of House of Delegates, Page 270.

Des Moines was chosen as the next place of meeting, the time being fixed as May 7, 8, 9, 1919.

The following resolution by Dr. T. F. Duhigg, Des Moines, was unanimously adopted:

Resolved: That it is the sense of this society that it shall be looked upon as an evidence of pro-German sympathies for any member for a period of fifty years, to purchase or permit any merchant to substitute any book, instrument or appliance or other article made in Germany or Austria.

The following resolution was offered by Dr. L. W. Littig and was adopted:

In view of the statement contained in the public press of this week, that Senator W. S. Kenyon has introduced into the United States Senate a resolution that the financial obligations to the United States incurred by France during this war be cancelled, the Iowa State Medical Society, in annual session assembled in Fort Dodge, hereby congratulates Senator Kenyon on his splendid thought and act and hopes that his resolution will be adopted by both the Senate and the House, and thus be transformed into a generous act to a patriotic and valiant people.

On the authorization of the House that the President appoint a war committee of three immediately, one of whom may be the Secretary of the State Association, for the purpose of co-ordinating the profession of the state for war work, the Chair appointed the following gentlemen: Dr. W. W. Pear-

son, Des Moines, Chairman; Dr. L. W. Dean, Iowa City; Dr. Tom B. Throckmorton, Des Moines, Secretary.

The following resolution presented by Dr. John R. Walker, Fort Madison, was adopted:

Resolved: That the Iowa State Medical Society stands solidly behind President Wilson in all he is doing to crush the damnable Hun and make the world safe for democracy, and that the Society endorses the war activities of W. C. Gorgas, Surgeon-General of the Army, and second, be it further resolved, that the Iowa State Medical Society most heartily endorses the Owen bill known as Senate Bill No. 3748, and the Dyer Bill as House File No. 9563, and third, be it further resolved, that the Secretary of the Society be instructed to send letters to Senator Cummins and Kenyon and to each of the Representatives from Iowa urging their support of these bills.

A vote of thanks was tendered the Webster County Medical Society for the hospitality extended the visiting members of the profession and their wives and guests during the Sixty-Seventh Annual Session of the Society.

The registration books show the total registration of the three days to be 429, of which 337 were members, 21 guests of the Society and 71 lady guests.

The retiring President said: Gentlemen, I wish to express to you my very sincere gratitude for the courtesy and attention given me. In introducing your presiding officer for the coming year, I can only say that I hope he will receive the same courtesy that has been extended to me.

President Witte: There come moments in the life of each one of us when we feel the inadequacy of language to express our feelings. Such a moment is with me now, and therefore I shall not try. But I wish you to know that I deeply and gratefully appreciate the honor you have conferred upon me, and, much more even than that, the trust which it involves, the confidence it expresses. At this time I bespeak for myself your patience and leniency. If there is any shortcoming, any error, I want you to remember that it is a matter of judgment rather than of intention, that it is a lapse of the brain rather than of the heart. In this solemn time, in this hour of fate, when history is made en masse, I shall ask your help at all times that we may in no wise be remiss or fail in the least in fealty and duty to our country. I thank you.

Upon motion, the meeting adjourned.

Tom B. Throckmorton, Secretary.

FROM "OVER THERE"

Paris, March 26, 1918.

Dr. Tom B. Throckmorton, Secretary,

Iowa State Medical Society, Des Moines, Ia.

Dear Doctor:

My 1918 Iowa State Medical Society membership card received yesterday evening, for which accept

my thanks for mailing. I also express my sincere thanks to the Woodbury County Medical Society for taking care of her "M.D.'s" in "the service." Woodbury County is O. K.

Iowa is all right. In fact, we fellows over here can't remember a thing bad about the whole United States, or find anything we would trade the smallest part of it away for.

Majors Conkling and Burcham, of your town, have been in the same bunch as I the past six weeks. We have been touring the British and French trenches, learning how they handle war sick and wounded.

Major Macrae, Capt. Bellinger, and Lieut. Moth, all of Hospital Unit "K" of Council Bluffs, are in the same party of twenty-five.

Didn't mean this to be a letter. Best of luck. Suppose you are getting into the service soon, if not already.

Fraternally,

John W. Shuman, Captain,
M.C.U.S.R.

Transactions of the House of Delegates Iowa State Medical Society

Sixty-Seventh Annual Session, Fort Dodge, Iowa,
May, 8, 9, 10, 1918

First Meeting—Wednesday Afternoon, May 8

The House of Delegates held its first meeting in the Commercial Club Rooms and was called to order by Dr. J. N. Warren, President, at 4:20 o'clock.

Roll call showed the presence of 45 members and officers.

Motion made by Secretary that the delegate from Dubuque County, J. J. Rowan, be seated as receipt of County Secretary showed that his dues were paid. Seconded and carried.

The Secretary, Dr. Tom B. Throckmorton, then read his annual report. It was moved that report be accepted and referred to the Finance Committee. Seconded and carried.

REPORT OF SECRETARY

Mr. President and Members of the House of Delegates:

In submitting the following report for your consideration, I would especially call attention to the question of membership, to the question of dues, and to the influence in general of the war upon the society as a whole.

MEMBERSHIP

I am indeed pleased to report that the question of membership for the past year compares most favorably with that of former years. For the past several years, indeed, a slow but continuous growth in membership of the society has taken place. In 1914, there was a total of 2,061 members; in 1915, 2,133 members; in 1916, 2,200 members, and the past year 2,253 members. To date,

dues have been received from 1,872 members, showing a loss of 199 in membership for the corresponding period of time last year. While the loss in membership thus far for the coming year may be more apparent than real, still I would not have the society lulled to sleep in the sweet anticipation that during the year 1918 all things may so adjust themselves automatically that the membership will still attain to the high position it now holds. Better still, I feel it to be our duty to see that every physician now enrolled in the society be so influenced that he will retain his connection with organized medicine if such a thing be possible.

DUES

Naturally this brings up the question of dues. What can we, as a society, do to bring about a better understanding of the dues problem? From time to time there have been published in the Journal articles dealing with the importance and necessity for the collecting and remitting of dues more promptly to the State Secretary's office. Undoubtedly, in many instances, these admonitions were read and heeded by both members and county secretaries. In some instances, however, the seed fell on stony soil for little or no fruit was brought forth in some counties. Were the individual who fails to pay his dues promptly within the period of time specified by the By-Laws, the only one who suffered by such negligence, then the society as a whole should be but little concerned, but a moment's reflection will clearly indicate that not only is the local county society made to suffer but our state society likewise becomes the recipient of an injustice which harms it both physically and financially. Just as the state society depends upon the component county medical societies for its support, so does the American Medical Association depend upon the constituent state societies for its strength and help. Since a reapportionment of the delegates among the constituent state associations will be made in 1919 "in proportion to the membership of each constituent on April first as shown by the certificates of membership submitted by the Secretaries of the Constituent Associations," it stands to reason that unless more promptness ensues in the sending in of the dues to the State Secretary's office during the coming year, there may be a readjustment in the delegates sent to represent the Iowa State Medical Society at the national meeting and this body may be obliged to reduce her quota of delegates. It behooves us, therefore, to see that both members and county secretaries are ever reminded of the necessity for more promptness in the collecting and sending of dues if our representation in the National House of Delegates is to remain at its present level in numbers and efficiency.

WAR INFLUENCES

The influence in general of the war upon the society has been felt, and will be even more keenly felt, in the personal loss of many men who have

been accustomed to attend the meetings of the society and take an active part in the transactions of its legislative body, but who are now engaged in the services of the government. While their absence causes sadness to many here today, allow me to bring at least this small word of comfort, that a moderate percent of the county societies have seen to it that the dues of their war members have been paid. What higher mark of tribute can be expressed to a member of this society entering the service of our government than to feel that his colleagues at home are only too glad to see that his county and state memberships remain unchanged? I would, therefore, recommend that this body take some favorable action, whereby it senses its spirit of appreciation to those counties who have so promptly and so cheerfully come to the front in the matter of seeing to it that no war member was obliged to pay his own dues.

Under this same caption may perhaps be best considered a brief report of the War Conference of Secretaries of the Constituent State Associations of the American Medical Association. The meeting was held at the Association Headquarters, April 30th, and was attended by a representation from 38 States. (For detailed report see Journal A.M.A., May 4, 1918—Page 1302). Among the speakers was Dr. Charles Mayo, President of the Association, who particularly dwelt on the unfortunate medical conditions existing in France as a result of the discontinuance of medical schools during the past four years. Dr. Mayo was loud in his praise for what organized medicine had accomplished in this country, since through its efforts the government had been brought to see the necessity of so arranging the draft laws as not to interfere materially with the medical schools. Dr. Mayo was also much enthused over the prospect of the creation of a great medical teaching institution in Paris. Such a project, he stated, was already under consideration and if brought to a favorable fruition would insure the world's future medical centre in Paris, thus removing and forever blotting out the possibility of resuscitating the antebellum medical centres in Berlin and Vienna. After a brief discussion by the various Secretaries as to existing conditions in their respective states, the following resolution was adopted:

Moved that the Secretaries of State Medical Associations request the Presidents of their respective state associations to appoint a war committee of three immediately, one of whom may be the secretary of the state association, for the purpose of co-ordinating the profession of each State for war work.

FINANCIAL STATEMENT

Moneys received and disposition of the amount during the year May 1, 1917, to April 30, 1918, were as follows:

	Receipts
Dues, 1913.....	\$ 5.00
Dues, 1914.....	9.00
Dues, 1915.....	9.00

Dues, 1916.....	30.00	
Dues, 1917.....	1,088.00	
Dues, 1918.....	9,110.00	\$10,251.00

Advertising	4,518.31	
Reprints	685.84	
Subscriptions	25.75	
Sales	9.52	
Arrangement Com. 1917 Ses.....	132.40	\$15,622.82

Disbursements

Commission to Advertising Bureau and Cash Discount.....	\$ 542.21	
Thos. F. Duhigg, Treasurer...	13,846.04	
Balance on hand.....	1,234.57	\$15,622.82

The following orders have been issued during the year:

No.		Amount	
773	Iowa Press Clipping Bureau, news service Feb. 18 to May 18.....	\$ 10.50	
774	Ehrman Mfg. Co., Malden, Mass., badges 1917 session	36.57	
775	Register and Tribune, cuts for Journal.....		
776	McNamara & Kenworthy, office supplies	1.45	
777	J. H. Welch Ptg. Co., April Journal and reprints	407.35	
778	J. H. Welch Ptg. Co., programs 1917 session	35.75	
779	Campbell, Johnson Prtg. Co., Des Moines, stationery	4.75	
780	Dr. Lewis Schooler, expense medico-legal com.	20.00	
781	McNamara & Kenworthy, Des Moines, supplies 1917 session	1.75	
782	Tom B. Throckmorton, Sec'y, salary Feb. 15 to May 15, \$162.50; com. adv., \$124.00; postage, mailing Journal, telegrams, office supplies, \$52.79.....	339.29	
783	Dr. Jeannette F. Throckmorton, exp. Com. Health & Pub. Instr.....	4.98	
784	Dr. Paul E. Gardner, Councilor's exp.	3.45	
785	Dr. Henry Albert, Councilor's expense	7.94	
786	Dr. Thos. F. Duhigg, Treas., salary 1916, 1917, \$150.00; postage, supplies, \$4.06	154.06	
787	Mrs. Carl M. Heidt, Des Moines, check-room, 1917 session	2.00	
788	Mrs. Martin Cahill, Des Moines, registration bureau, 1917 session.....	6.00	
789	Miss Eva Seevers, Des Moines, registration bureau, 1917 session.....	6.00	
790	Tom Johnson, Des Moines, ass't to Pres. & Sec., 1917 session.....	6.00	
791	Miss Ida J. Brinton, Des Moines, reporting House of Delegates.....	15.00	
792	Seicke Tent & Awning Co., rent of canvas, 1917 session	3.00	
793	Miss Mable Tones, Des Moines, check-room, 1917 session	4.00	
794	Dr. J. F. Herrick, Ottumwa, expenses President 1916-1917	25.00	
795	Kenyon & Kelleher, attys., Ft. Dodge, medico-legal service	150.00	
796	Frank Maher, atty., Ft. Dodge, medico-legal service	150.00	
797	Register & Tribune, cuts for June Journal	11.11	
798	Register & Tribune, cuts for June Journal	5.40	
799	American Medical Association, 225 1917 membership cards.....	2.25	
800	J. H. Welch Prtg. Co., May Journal and reprints	346.00	
801	Upham Bros., Des Moines, renewal bonds Treasurer and Secretary.....	50.00	
802	Register & Tribune, cuts for Journal..	22.10	
803	D. S. Fairchild, editor, salary April, May and June, \$375.00; postage medico-legal, \$1.76	376.76	
804	J. H. Welch Prtg. Co., June Journal and reprints	327.70	
805	Tom B. Throckmorton, Sec'y, salary May 15 to Aug. 15, \$162.50; com. adv., \$134.14; office supplies, telegrams, mail Journal and postage, \$34.16.....	330.80	
806	Register & Tribune, cuts.....	3.92	
807	J. H. Welch Prtg. Co., July Journal and reprints	410.10	
808	Reed & Tuthill, attys., Waterloo, medico-legal service	175.00	
809	Wolfe & Wolfe, attys., Clinton, medico-legal service	100.00	
810	Dutcher & Davis, attys., Iowa City, medico-legal, April, May and June....	655.39	
811	Dr. John R. Walker, Councilor exp....	7.25	
812	Register & Tribune, cuts for Journal..	3.42	
813	J. H. Welch Prtg. Co., August Journal and reprints	336.65	
814	Bankers Cabinet & Supply Co., Des Moines, stationery	7.85	
815	Heilhecker Prtg. Co., Des Moines, stationery for Council	24.34	
816	Ia. Press Clipping Bureau, news service May 18 to Aug. 18.....	10.50	
817	Iowa Frye Co., Des Moines, carbon paper	2.50	
818	Des Moines Duplicating Co., letters to delinquents	5.65	
819	McNamara & Kenworthy, Des Moines, office supplies	1.60	
820	Tom B. Throckmorton, Sec'y, com. adv., \$51.20; mailing Journal, postage, \$15.75	66.95	
821	D. H. Bowen, expense attending trustees' meeting Aug. 28.....	20.90	
822	Miss Adelaide Folsom, Ripon, Wisc., reporting 1917 session.....	135.00	
823	Void.		
824	Dr. D. S. Fairchild, salary, July, Aug. and Sept., \$375.00; postage, medico-legal com., \$0.50	375.50	

825	J. H. Welch Prtg. Co., Sept. Journal and reprints	335.20
826	Dr. T. E. Powers, Clarinda, expense attending Trustees' meeting Aug. and November	23.20
827	Ia. Press Clipping Bureau, news service Aug. 18 to Nov. 18.....	10.50
828	Bankers Cabinet & Supply, stationery Com. Public Health, 1918 membership receipts and envelopes	17.25
829	Des Moines Duplicating Co., letters to county secretaries	2.25
830	American Medical Association, 1918 membership cards	6.90
831	Koch Bros., Des Moines, cash book and 1918 record book.....	4.95
832	J. H. Welch Prtg. Co., Oct. Journal and reprints, \$633.15; Nov. Journal and reprints, \$328.40	961.55
833	Dutcher & Davis, attys., Iowa City, medico-legal, July, Aug. and Sept.....	529.00
834	McNamara & Kenworthy, office supplies	2.75
835	Tom B. Throckmorton, Sec'y, salary, Aug. 15 to Nov. 15, \$162.50; adv. com., \$126.03	288.53
836	Tom B. Throckmorton, Sec'y telephone and telegrams, mail Journal & postage	51.97
837	Wilson & Smith, attys., Appanoose Co. medico-legal	75.90
838	D. S. Fairchild, editor, salary, Oct., Nov. and Dec.	375.00
839	Dutcher & Davis, Iowa City, medico-legal, Oct., Nov. and Dec.....	535.20
840	J. H. Welch Prtg. Co., Dec. Journal and reprints and 1918 wrappers.....	432.30
841	Register and Tribune, cuts, Journal..	24.30
842	J. H. Welch Prtg. Co., Jan. Journal and reprints	309.00
843	Register and Tribune, cuts for Journal	2.38
844	Bankers Cabinet and Supply, Des Moines, office stationery	3.50
845	McNamara & Kenworthy, office supplies	3.65
846	B. F. Swanson Co., Des Moines, type-writer supplies	3.50
847	Ia. Press Clipping Bureau, news service, Nov. 18 to Feb. 18.....	10.50
848	J. H. Welch Prtg. Co., Feb. Journal and reprints	340.80
849	Tom B. Throckmorton, Sec'y, tel., mailing Journal and postage.....	86.21
850	Tom B. Throckmorton, Sec'y, salary, Nov. 15 to Feb. 15, \$162.50; adv. com., \$160.70	323.20
851	Dutcher & Davis, prtg. amend. to abstracts, supreme court, brief and arguments	40.00
852	Simon Fisher, atty., Rock Rapids, medico-legal	100.00
853	Dr. D. H. Bowen, exp. attending March meeting Trustees.....	20.00

854	Mrs. E. H. King, Muscatine, refund dues for 1918, Dr. E. H. King, deceased	3.00
855	Register and Tribune, cuts for Journal	10.48
856	D. S. Fairchild, editor, salary, Jan., Feb. and March, \$375.00; postage, medico-legal, \$1.55	376.32
857	J. H. Welch Prtg. Co., March Journal and reprints	335.85

JOURNAL STATEMENT
January 1 to December 31, 1917

Income		
Advertising	\$4,537.03	
Reprints	757.69	
Subscriptions, non-members	27.50	
Sales	15.67	
Subscriptions, 2,253 members.....	2,253.00	\$7,590.89
Expense		
Printing—		
7—64 page Journals..	\$2,148.45	
2—68 page Journals..	659.50	
2—72 page Journals..	718.80	
1—80 page Journal....	376.00	\$3,902.75
Engravings	90.40	
Mailing and city deliveries	126.76	
Wrappers for 1918	58.35	
Postage, stationery and supplies	37.66	
News service	42.00	
Reprints	683.10	
Commission Business Manager....	608.57	
Commission adv. bureau & dis....	519.37	
Editor's salary	1,500.00	
		\$7,568.96
Profit	21.93	\$7,590.89

Respectfully submitted,
Tom B. Throckmorton,,
Secretary.

The Treasurer, Dr. Thomas F. Dubigg, read his annual report. It was moved that the report be accepted and referred to the Finance Committee. Seconded and carried.

REPORT OF TREASURER

The annual report of the Treasurer, attached herewith, speaks for itself, but I wish to invite your attention to a few points which will aid you in seeing clearly the great improvement in the finances of the society during the past year.

The balance on hand in 1915 was \$2,545.20. The balance in 1916, after all bills were paid, was slightly more than \$5,000.00. The balance on hand in 1917 was \$10,817.06. The assets of the society this year on the 1st day of May ran over \$15,000.00.

This is a very encouraging financial condition for the society. With the present arrangements, if dues are left at the present figure, it is reasonable

to presume that the financial condition of the society will show a steady improvement at the rate of about \$3,000.00 to \$5,000.00 a year.

I believe the dues should be maintained where they are without increase or decrease. The usual degree of economy should prevail until a fund of at least \$25,000.00 is accumulated. This amount is none too large to have on hand for any institution which provides for defense against malpractice suits for a number as great as the membership in this society, particularly since the enactment of the Workmen's Compensation Legislation which, experience shows, tends to increase the number of claims filed against physicians.

Statement of receipts and disbursements of the Treasurer of the Iowa State Medical Society, April 30, 1917, to May 1, 1918.

Receipts

Balance on hand May 1, 1917..	\$10,817.06	
Membership dues	9,446.00	
Advertising	3,588.83	
Reprints	648.54	
Subscriptions	21.75	
Sales	8.52	
Arrangement Com., 1917 ses'n..	132.40	
Interest on time deposit.....	268.26	
Int. on bond to Nov. 15, 1917.	29.20	\$24,960.56

Disbursements

Expenses as per orders here-		
with attached	\$10,525.19	
Liberty Loan bond	2,000.00	
Balance on hand, time de-		
posit,, 4 per cent interest.....	12,368.26	
Balance on hand, subject to		
checks	67.11	\$24,960.56

The assets of the society May 1, also include interest, which will be due between now and June 1, amounting to \$200.86; received from the Secretary in May after May 1, \$1,234.57, making the total assets of the society about \$15,870.80.

PEOPLE'S SAVINGS BANK

Des Moines, Iowa, May 1, 1918.

This will certify that there was on deposit in this bank to the credit of the Iowa State Medical Society in the name of Dr. T. F. Duhigg, Treasurer, at the close of business April 30, 1918, the following funds:

In checking account	\$ 67.11
In savings account	12,368.25
Interest on savings account to June 1,	
1918, will amount to	160.85

We also hold for safe keeping \$2,000.00 of Second Liberty Loan bonds with \$40.00 interest on same due May 15, 1918.

Yours truly,

E. A. Slininger, Cashier.

Checks were issued for the following amounts:

Check No.	1917		Amount
160	5-11	Thos. F. Duhigg, salary and legislative expense	\$ 154.06
161	5-11	Iowa Press Clipping Bureau, clippings, three months.....	10.50
162	5-11	Ehrman Mfg. Co., Malden, Mass., badges 1917 meeting.....	36.57
163	5-11	Register and Tribune, cuts, May issue	9.36
164	5-11	McNamara & Kenworthy, invoice May 4th, supplies.....	1.45
165	5-11	J. H. Welch Co., April issue....	407.35
166	5-11	J. H. Welch Co., programs 1917 issue	35.75
167	5-11	(Void)	
168	5-11	Campbell-Johnson Co., 1,500 envelopes	4.75
169	5-12	Dr. Lewis Schooler, medico-legal com. expense	20.00
170	5-12	McNamara-Kenworthy, supplies 1917 session	1.75
171	5-12	T. B. Throckmorton, office supplies, salary, com.	339.29
172	5-12	Dr. Jeannette Throckmorton, exp. Health Com.	4.98
173	5-12	Dr. Paul E. Gardner, Councilor expense	3.45
174	5-12	Dr. Henry Albert, Councilor expense	7.94
175	5-12	(Void)	
176	5-25	J. F. Herrick, expense President's office 1917	25.00
177	5-25	Mrs. C. M. Heidt, services check room, 1917 meeting.....	2.00
178	5-25	Mrs. M. Cahill, registration bureau 1917 meeting.....	6.00
179	5-25	Tom Johnson, Asst. to Pres and Sec., 1917 meeting.....	6.00
180	5-25	Miss Eva SeEVERS, registration bureau 1917 meeting	6.00
181	5-25	Ida J. Brinton, reporting House of Delegates	15.00
182	5-25	Seick Tent & Awning Co., rent of canvas, 1917 session.....	3.00
183	5-25	Miss Mabel Toner, services check room 1917 session.....	4.00
184	6- 5	Register and Tribune, cuts and halftones	11.11
185	6- 5	Frank Maher, atty., medico-legal fee	150.00
186	6- 5	Kenyon, Kelleher & Price, medico-legal fee	150.00
187	6-14	Register and Tribune, cuts and zincs	5.40
188	6-14	American Medical Assn., 200 membership cards	2.25
189	6-14	(Void)	
190	6-18	Upham Bros., renewal bonds, Sec. and Treas.	50.00
191	6-18	J. H. Welch Co., May issue and reprints	346.00

192	7- 7	Register and Tribune, cuts July issue	22.10	223	12- 4	Dutcher & Davis, medico-legal services	529.00
193	7- 7	Dr. D. S. Fairchild, salary and expense three mos.	376.76	224	12- 4	T. B. Throckmorton, salary and commissions	288.53
194	7-20	Welch Printing Co., June issue and reprints	327.70	225	12- 4	T. B. Throckmorton, postage, telegrams and telephone calls..	51.97
195	8-11	T. B. Throckmorton, salary, com. May, June, July.....	330.80	226		(Void)	
196	8-14	Register and Leader, halftones August issue	3.92	227	12-13	Wilson & Smith, medico-legal fees	75.90
197	8-17	J. H. Welch Co., July issue and reprints.....	410.10	1918			
198	9- 1	Wolfe & Wolfe, attys., medico-legal fees	100.00	228	1- 7	Dr. Fairchild, salary, Oct. Nov., Dec., 1917.....	375.00
199	9- 1	McNamara-Kenworthy, supplies Secretary's office	1.60	229	1-18	Welch Printing Co., Dec. issue and reprints	432.30
200	9- 1	Register and Tribune, three halftones	3.42	230	1-18	Dutcher-Davis, medico-legal services	535.26
201	9- 1	Welch Printing Co., August issue and reprints	336.65	231	2- 7	Welch Printing Co., January issue and reprints	309.00
202	9- 1	Bankers Cabinet Co., stationery State society	7.85	232	2- 7	Register and Tribune, cuts, February issue	24.30
203	9- 1	Iowa Press Clipping Bureau, service May 18 to Aug. 18.....	10.50	233	3-12	Dr. D. H. Bowen, exp. trustees' meeting, March 12.....	20.00
204	9- 1	Heilhecker Prtg. Co., stationery councilors 1917	24.34	234	3-12	Register and Tribune, halftones, February	2.38
205	9- 1	Des Moines Duplicating Co., letters	5.65	235	3-12	Bankers Supply Co., envelopes	3.50
206	9- 1	Iowa-Frye Co., one box carbon paper	2.50	236	3-12	McNamara-Kenworthy, ledger sheets for Treasurer.....	3.65
207	9- 1	T. B. Throckmorton, postage and mailing for August	66.95	237	3-12	B. F. Swanson, Secretary's supplies	3.50
208	9- 1	Reed & Tuthill, attys, medical legal fees	175.00	238	3-12	Iowa Press Clipping Bureau, service Jan. 18 to Feb. 18.....	10.50
209	9- 1	Dr. John R. Walker, councilor fees, 1st District	7.25	239	3-12	T. B. Throckmorton, postage, miscellaneous expense	86.21
210	9- 1	Dutcher & Davis, medico-legal services	655.39	240	3-12	T. B. Throckmorton, salary and commission, one qr.....	323.20
211	9-28	Adelaide Folsom, reporting 1917 session	135.00	241	3-12	Dutcher & Davis, medico-legal services	40.00
212	9-28	Dr. D. H. Bowen, expense Trustees meeting, Aug. 28.....	20.90	242	3-12	Simon Fisher, atty., medico-legal services	100.00
213	10-10	Welch Printing Co., September issue and reprints	335.20	243	3-19	Welch Printing Co., February issue and reprints.....	340.80
214	10-10	Dr. D. S. Fairchild, salary July, Aug., Sept. and exp.	375.50	244		(Void)	
215	12- 4	Iowa Press Clipping Bureau, service, Aug. 18 to Nov. 18.....	10.50	245	3-19	Register & Tribune, zinc etching and halftones	10.48
216	12- 4	Dr. T. E. Powers, exp. trustees meeting Oct. 28.....	23.20	246	4-10	Dr. Fairchild, salary and postage	376.32
217	12- 4	McNamara-Kenworthy, office supplies for Secretary	2.75			Total	\$10,525.19
218	12- 4	Des Moines Duplicating Co., letters	2.25			Respectfully submitted,	
219	12- 4	Bankers Cabinet & Supply Co., stationery, Public Health Com.	17.25			Thos. F. Duhigg, Treasurer.	
220	12- 4	A.M.A., 1918 membership cards	6.90			Report of Council was then asked for. The Secretary explained the absence of the Chairman, Dr. Paul Gardner, by reading a telegram stating that the doctor was seriously ill. In the absence of both chairman and secretary no report was made.	
221	12- 4	Koch Bros., record and cash books, Secretary	4.95			New Hampton, Ia., May 7, 1918.	
222	12- 4	J. H. Welch Co., Oct. and Nov. issues and reprints.....	961.55			Dr. Tom Throckmorton, Care State Medical Society, Fort Dodge, Ia.	
						Dr. Paul operated on last night. Very serious. Report will follow later.	Mrs. Gardner.

Report of Council was then asked for. The Secretary explained the absence of the Chairman, Dr. Paul Gardner, by reading a telegram stating that the doctor was seriously ill. In the absence of both chairman and secretary no report was made.

New Hampton, Ia., May 7, 1918.

Dr. Tom Throckmorton, Care State Medical Society, Fort Dodge, Ia.

Dr. Paul operated on last night. Very serious. Report will follow later. Mrs. Gardner.

Report of the Board of Trustees was then called for and was duly submitted by Dr. J. W. Cokenower, Chairman. It was moved that the report be adopted. Seconded and carried.

TRUSTEES' REPORT

May 1, 1917, to April 30, 1918

The Board of Trustees beg leave to report as follows:

The splendid reports just read by our Secretary and Treasurer are self-explanatory and need no further explanation by the board and justify but little more to show our society's finances are in good condition and our Journal increased in size and printed for a little less the past year, than the preceding one.

The board authorized our Treasurer to buy \$2,000.00 First Liberty Loan bonds, and the reason not a larger one or second and third ones, was that all our members have already personally subscribed for them.

It has occurred to the board that if our Constitution and By-Laws are not now sufficiently explicit concerning the expenses of its officers and committees, the board suggests that they be made so, through the proper official procedure to the end that our society be put on strictly business principles, and that the salaries of our editor, secretary and treasurer, be continued as now and that all their expenses, as well as those of all other officers and committees be paid by the society on presentation of itemized invoices.

The board suggests that, inasmuch as the annual dues from members and increased advertising has put our society in good financial condition, so much so that we will be able to meet the anticipated expenses of a problematic future, the membership dues be not changed.

J. W. Cokenower, Chairman;

D. H. Bowen,

Board of Trustees.

The report of the Medico-Legal Committee was held over at the request of Dr. Fairchild, who stated that the report was not ready.

No report of Committee on Constitution and By-Laws.

The report of the Committee on Conservation of Vision and Hearing being called for, the report of Dr. H. G. Langworthy, Chairman, was read by the Secretary. It was moved that same be adopted. Seconded and carried.

CHAIRMAN'S REPORT

The work of the Conservation of Vision and Hearing Committee, while retarded because of the pressure of war work, has nevertheless continued since our last annual meeting and with fair success. Because of the splendid ground work and impetus given these subjects by our committee the

year previous, many county superintendents of schools have continued the eye, ear, nose and throat lectures on medical inspection of school children before the teachers' institute meetings, etc., and much more attention is being given the rural school pupils along these lines than formerly. We have also been instrumental this year in establishing the first regular "Day School" for Deaf Children in Iowa in the city of Dubuque as a special department of the public school system with state aid of eleven dollars for each pupil a month. In addition considerable correspondence has been carried on with many educators concerning school subjects and one article prepared by the chairman and published in one of the teaching magazines of the state on the subject of Conservation of Vision and Hearing in School Children.

Respectfully submitted,

H. G. Langworthy, M.D., Chairman.

The report of the advisability of increasing the Secretary's salary was presented by Dr. Lewis Schooler, Chairman. It was moved and seconded that the report be accepted. The President took exception to the committee's report and stated that he felt the report was out of order inasmuch as it did not deal specifically with the work for which the committee was originally appointed. Dr. Kime then moved that the report be tabled. Seconded, and a rising voted showed 27 for and 12 against. The report was duly tabled.

REPORT OF COMMITTEE

The Committee on Salaries desire to report as follows:

First. That the editor of the Journal have full charge of all the matter published in each installment, including the advertising, and shall receive for said services the sum of fifteen hundred dollars (\$1,500.00) annually, as salary and such further sum as may be necessary, viz.: Expenses for stationery, postage, express charges and stenographer as the Board of Trustees may deem necessary and just; and we further recommend that the committee on Publication be discontinued and all duties heretofore performed by said committee shall be assumed by the editor, and that all matters contained in the by laws in conflict with these recommendations are hereby repealed.

Second. That the secretary shall perform all duties usually attaching to such position, and shall receive as salary the sum of six hundred dollars (\$600.00) annually and such further sum for expenses as the Board of Trustees shall deem fair and just.

Lewis Schooler, Chairman;

J. W. Cokenower,

L. W. Littig.

J. S. Weber presented resolutions from Scott County Medical Association and moved their adoption. Seconded. After brief discussion the mo

tion was made to table the resolutions which, on being seconded, was carried and resolutions were tabled.

Resolutions introduced under instructions of Scott County Medical Society:

Whereas, Grave conditions were revealed by the menacing venereal disease rate of nearly 400 per thousand in the first draft army, reflecting a similar condition among all the men subject to draft;

Whereas, The army rate of venereal disease at the same time was less than 137 per 1,000, the difference between these two rates amounting to 2,630,000 per 10,000,000 men clearly expressing the difference between military protective measures and control as against civil protective attempts;

Whereas, The army record proves that this staggering and self-inflicted casualty list which endangers our victory and the co-relative vitiation of the nation could be avoided by placing registrants under similar medical protection to that observed in the army camps:

Whereas, By so protecting the registrants constituting one-fifth of the entire male population and that fifth sexually the most active and indiscreet, the greatest single step forward in the protection of all of the population would be taken;

Whereas, Thousands of qualified physicians all over the country unavailable for field service are ready to so protect them, therefore, be it

Resolved, That the medical protection of registrants be dealt with in the light of a pressing war emergency, substituting for the present conflicting authority, military jurisdiction and control, calling for some swift military organization as outlined in the appended suggestions that would incorporate the services, if need be, of every qualified physician wherever located, and direct them promptly to the task of averting disaster.

Resolved, That the State Medical Association of Iowa urge upon the Secretary of War the prompt creation of a said military medical organization and that the members of said association herewith pledge their services to him thereunder, and

Resolved, That copies of these resolutions be transmitted to the President, the Secretary of War, the Surgeon-General of the Army and the congressional representatives in Washington of this State, and

Resolved, That the duly selected delegates of this association to the annual convention of the American Medical Association be instructed to urge the adoption by that convention of resolutions of similar import and substance.

J. S. Weber, Delegate.

Dr. Duhigg moved that the office expenses of the Secretary be allowed and that the Secretary's salary be \$400.00 a year. Seconded. After discussion, the motion was carried.

Dr. Littig moved that the Secretary be instructed to send a message of sympathy and condolence to

Mrs. Dr. Paul Gardner. Seconded and carried. The message was duly sent.

Meeting adjourned until 8:00 o'clock Thursday morning.

The delegates then met in caucus by congressional districts to select members for the nominating committee, which was reported as follows:

First District—

Second District—J. S. Weber.

Third District—J. E. Brinkman.

Fourth District—Guy A. Lott.

Fifth District—

Sixth District—S. E. Hinshaw.

Seventh District—W. O. Weston.

Eighth District—T. M. Throckmorton.

Ninth District—E. A. Moore.

Tenth District—J. W. Kime.

Eleventh District—J. G. deBey.

Second Meeting, Thursday Morning, May 9

The meeting of the House of Delegates was called to order by the President, Dr. J. N. Warren, at 8:40 o'clock.

Roll call showed the presence of 33 members and officers.

The minutes of the previous meeting were read and approved.

Owing to the continued absence of the Chairman and Secretary of the Council, no report was made.

The report of the Medico-Legal Committee was then called for, but its Chairman, Dr. Fairchild, asked that the reading of the report be deferred until the following morning.

Owing to the absence of the Chairman, Dr. Paul E. Gardner, the Committee on Health and Public Instruction was unable to report.

The report of the Committee on Constitution and By-Laws was then called for, but no report was made.

Under the head of new business, the Secretary, Dr. Tom B. Throckmorton, read a letter from the Dubuque County Medical Society, in which the request was made that the society be granted a charter. It was moved and seconded that the request be granted. After a brief discussion the motion was carried.

Dubuque, Iowa, Feb. 13, 1918.

Dr. T. B. Throckmorton, Secretary of the Iowa State Medical Society, Des Moines, Iowa.

Dear Doctor:

In conformity with the wishes of the Dubuque County Medical Society, constitutionally expressed at the February, 1918, regular meeting, we, the undersigned, hereby make application to the Council of the Iowa State Medical Society for a charter for the Dubuque County Medical Society.

Yours truly,

(Signed) J. H. Schrup, President.

C. E. Lynn, Secretary.

Dr. Littig then presented the following resolution and moved its adoption:

Resolved: That the Committee on Constitution and By-Laws harmonize and co-ordinate and bring up to date Chapters 8 and 14 of the By-Laws and also to harmonize such other parts of the By-Laws as may be contradictory.

Seconded and carried.

Adjourned.

Special Meeting

A special meeting of the House of Delegates was called by the President, Dr. J. N. Warren, at 4:00 P. M., the purpose of the meeting being to receive a report from the Committee on Constitution and By-Laws.

Dr. L. W. Littig moved that the calling of the roll be dispensed with. Seconded and carried.

Dr. D. C. Brockman, Chairman of the Committee on Constitution and By-Laws presented the following report:

CHANGES IN THE CONSTITUTION

In Article 8, Section 3, in line seven after the words "who has not been in attendance at the Annual Session" add "except one who is absent on account of illness or who is in the Government service."

CHANGES IN THE BY-LAWS

In Chapter 6, Section 3, in line ninth after the words "approved by the Board of Trustees" add "or invested in United States bonds."

In Chapter 8, Section 4, in the second line strike out the word "Secretary" and insert the word "Editor."

In line eighth strike out the word "transaction" and insert the word "Journal." Strike out all the balance of this section beginning in the ninth line with the words "the committee," except the last two lines.

In Chapter 9, Section 1, change the first line to read "An assessment of \$5.00 per capita on the membership of the component societies is hereby made the annual dues of this society."

(Signed) D. C. Brockman, Chairman;

V. L. Treynor,

M. J. Kenefick,

Committee on Constitution and By-Laws.

The Secretary, Dr. Tom B. Throckmorton, stated that the report of Paul E. Gardner, Chairman of the Council, had been received and requested the wishes of the society concerning the reading of the report. It was moved that the reading of the report be deferred until tomorrow morning. Seconded and carried. Reading of the report was deferred.

There being no further business to come before the House of Delegates, a motion to adjourn was made, which, being seconded and carried, the House duly adjourned to meet at 8:00 A. M., May 10.

Friday Morning Meeting, May 10

The meeting was called to order at 8:30 o'clock by First Vice-President M. J. Kenefick.

Roll call showed the presence of 30 members and officers.

Minutes of the previous meeting read by the Secretary, Dr. Tom B. Throckmorton, and after motion, duly seconded, were approved.

The report of the Committee on Nominations being the first order of business, the following report was made by Dr. J. E. Brinkman, Chairman:

The Committee on Nominations met in regular session May 9, organized, and beg leave to submit to your body the following report:

For President Elect—Dr. W. L. Allen, Davenport; Dr. O. J. Fay, Des Moines; Dr. Henry Albert, Iowa City.

For First Vice-President—Dr. W. A. Rohlf, Waverly.

For Second Vice-President—Dr. Evan S. Evans, Grinnell.

For Secretary—Dr. Tom B. Throckmorton, Des Moines.

For Treasurer—Dr. Thomas F. Duhigg, Des Moines.

For Councilor Fifth District—Dr. G. E. Crawford, Cedar Rapids.

For Councilor Sixth District—Dr. O. F. Parrish, Grinnell.

For Trustee—Dr. W. B. Small, Waterloo.

For Delegates to A.M.A.—Dr. M. N. Voldeng, Woodward; Dr. J. C. Rockafellow, Des Moines.

For Alternates—Dr. B. L. Eiker, Leon; Dr. J. C. Langan, Clinton.

For vacancies on the following Committees:

Medico-Legal—Dr. D. S. Fairchild, Clinton.

Health and Public Instruction—Dr. Paul E. Gardner, New Hampton.

Constitution and By-Laws—Dr. D. C. Brockman, Ottumwa; Dr. V. L. Treynor, Council Bluffs; Dr. M. J. Kenefick, Algona.

Conservation of Vision and Hearing—Dr. H. G. Langworthy, Dubuque; Dr. T. U. McManus, Waterloo; Dr. F. E. V. Shore, Des Moines.

Publication—Dr. W. L. Bierring, Des Moines; Dr. C. P. Howard, Iowa City.

Finance—Dr. C. P. Frantz, Burlington; Dr. J. W. Harrison, Guthrie Center; Dr. C. J. Saunders, Fort Dodge.

Public Policy and Legislation—Dr. W. L. Biering, Des Moines; Dr. Harry P. Engle, Newton; Dr. G. E. Decker, Davenport.

It was moved and seconded that the Committee on Nominations recommend to the House of Delegates that the special committee on workmen's compensation be discontinued. Carried. It is recommended that Des Moines be chosen for the place of meeting of the 1919 session of the state society and that the date of meeting be May 7, 8, and 9.

J. E. Brinkman, Chairman;

T. M. Throckmorton, Secretary.

The President, Dr. J. N. Warren, then took the chair as presiding officer.

Following the reading of the report, ballots were taken for President-Elect. The result indicated a majority for Dr. Will L. Allen of Davenport. Dr. Allen was duly declared President-Elect for the coming year.

Dr. T. F. Duhigg moved that in view of the fact that there was only one candidate for each of the other offices that the By-Laws be suspended and the Secretary be authorized to cast the ballot for the other officers as reported by the Nominating Committee. Seconded and carried.

The Secretary then cast the ballot as instructed and the President declared the nominees as reported by the Nominating Committee duly elected.

It was moved that the report of the delegates of the Fifth District that Dr. G. E. Crawford, Cedar Rapids, be re-elected as councilor of that district; and of the delegates of the Sixth District, that Dr. O. F. Parrish, Grinnell, be elected as councilor for the above named district; seconded, carried and the Secretary cast the ballot as directed.

Dr. Duhigg moved the adoption of that portion of the report of the Nominating Committee which recommended the discontinuance of the special committee on Workmen's Compensation and also that the next meeting place of the State Medical Society be Des Moines and the time May 7, 8 and 9, 1919. Seconded and carried.

The report of the Special Committee appointed last year to confer with a like committee of the legal profession was read by Dr. J. W. Kime, who moved its adoption. Seconded and carried. Report is as follows:

Your committee appointed to act in conjunction with the State Bar Association to amend the law relative to the commitment of persons suspected of being insane, beg leave to recommend: That the law providing for the commitment of citizens of Iowa suspected of being afflicted with insanity to our state hospitals for treatment and restraint be so amended that the citizen or person so afflicted, or the citizen or person making complaint, may, upon application made to the county board of insanity, either by himself or those interested in his welfare, and supported by affidavits of at least two responsible citizens; take an appeal from the county board of insanity to a board composed of the superintendents of three of the Iowa State hospitals for the treatment and care of the insane. Said board to be selected by the county clerk of the county in which the charges are made, and to be governed in all its proceedings by the same legal restrictions as are now provided for the proceedings of the county boards of insanity. But nothing in this amendment shall be so construed as to prevent either side from taking an appeal to the courts of last resort as provided by law.

J. W. Kime,
B. L. Eiker.

The following resolution was presented by Dr. L. W. Littig, who moved its adoption; seconded and carried. The report is as follows:

In view of the statement contained in the public press of this week, that Senator W. S. Kenyon has introduced in the United States Senate a resolution that the financial obligations to the United States incurred by France during this war be cancelled, the Iowa State Medical Society, in annual session assembled in Fort Dodge, hereby congratulates Senator Kenyon in his splendid thought and act, and hopes that his resolution will be adopted by both the Senate and the House, and thus be transformed into a generous act to a patriotic and valiant people.

Motion was made by Dr. J. W. Kime that the Secretary be instructed to send a night letter to Senator Kenyon informing him of the adoption of the resolutions just read. Seconded and carried.

The report of the Committee on Constitution and By-Laws as presented at the meeting May 9, on motion of Dr. J. W. Kime, and duly seconded, was carried.

The Secretary, Dr. Tom B. Throckmorton, in the absence of Dr. D. S. Fairchild, reported that the Medico-Legal Committee was unable to send in their report.

Dr. J. W. Kime moved that the report of the Medico-Legal Committee when submitted by Dr. Fairchild, be published in the Journal, together with the statement that although the association had not recommended its approval or rejection that it be placed in the transactions of the minutes. Seconded and carried. The report, as submitted, is as follows:

Legal expenses in defending members of the State Society against malpractice claims, April 1, 1917, to April 1, 1918:

Dutcher, Davis & Hambrecht:	
First quarter—April 1 to July 1, 1917.....	\$ 655.39
Second quarter—July 1 to Oct. 1, 1917....	529.00
Third quarter—Oct. 1, 1917 to Jan. 1, 1918	535.26
Fourth quarter—Jan. 1 to April 1, 1918....	946.44
Total for year	\$2,666.09
Dutcher, Davis & Hambrecht—Briefs, etc.:	
Cadwallader case	40.00
	\$2,706.09

Local Attorneys:

Reed & Tuthill (Hartman case).....	\$ 175.00
Burrell & Devitt (Jerrell case).....	100.75
Wolfe & Wolfe (Langan case).....	100.00
Frank Maher (Jacques case).....	150.00
Kenyon, Kelleher & Price (Jacques case)	150.00
Simon Fisher (Bouslough case).....	100.00
	\$ 775.75
	2,706.09

Total amount paid for legal service.....\$3,481.84

CONDENSED REPORT OF CASES AGAINST MEMBERS OF THE IOWA STATE MEDICAL SOCIETY

To Dr. D. S. Fairchild, Dr. H. B. Jennings, and
Dr. Lewis Schooler, Medical Defense Committee.
Gentlemen:

We have submitted a full report upon all cases
pending up to date of our last report and also of
cases commenced since that date.

The following is a summary of certain particu-
lars in all cases commenced since the establish-
ment of the Medical Defense Committee of the as-
sociation:

Cases commenced since organization of de- partment	148
Cases commenced prior to the reports of 1909....	15
Cases commenced during 1909-1910.....	13
Cases commenced during 1910-1911.....	10
Cases commenced during 1911-1912.....	14
Cases commenced during 1912-1913.....	13
Cases commenced during 1913-1914.....	10
Cases commenced during 1914-1915.....	24
Cases commenced during 1915-1916.....	19
Cases commenced during 1916-1917.....	17
Cases commenced during 1917-1918.....	13
Cases pending at date of 1909 report.....	7
Cases pending at date of 1910 report.....	10
Cases pending at date of 1911 report.....	14
Cases pending at date of 1912 report.....	25
Cases pending at date of 1913 report.....	26
Cases pending at date of 1914 report.....	21
Cases pending at date of 1915 report.....	28
Cases pending at date of 1916 report.....	33
Cases pending at date of 1917 report.....	33
Cases now pending	29
Total cases disposed of.....	124

Nature of Cases

Malpractice in removing seed wart.....	1
Malpractice in not discovering and uniting sev- ered ligaments of the wrist.....	1
Alleged assault	2
Removal of cancer of the hand.....	1
Conspiracy to have plaintiff declared insane....	1
Fracture of arm.....	23
Fracture of leg or femur.....	39
Appendicitis—sponge case	1
Operation for kidney—sponge case.....	1
Appendicitis—malpractice in operation.....	3
Appendicitis—exploratory opening	1
Child birth, alleged failure to attend after al- leged agreement to do so; child died, (sep- arate action by father and mother).....	2
Hand crushed, alleged improper treatment.....	1
Hand lacerated, alleged improper treatment.....	1
Ear, alleged improper treatment.....	1
Eye, alleged improper treatment.....	1
Infection, childbirth	2
Medical treatment of child	1
Abortion, improper after-treatment	3
Abortion, without justification	2

Improper treatment of nail puncture in foot....	1
Alleged removal of wrong kidney.....	1
Stomach trouble, alleged improper treatment and failure to treat	1
Anesthetic, death under.....	1
Improper diagnosis of diphtheria	1
Improper diagnosis of broken ribs.....	1
Removal of uterus, alleged negligent incision of the bladder	2
X-ray burn	3
Infection following amputation	1
Alleged improper treatment of scald.....	1
Removal of adenoids	2
Alleged improper abdominal incision.....	3
Failure to administer serum, patient died of lockjaw	1
Fracture of collar bone	2
Willful insertion of instrument, producing abortion	1
Operation for pregnancy of fallopian tube.....	1
Negligent administration of poison, causing death	1
Improper treatment of wound in leg from kick of horse	1
Alleged negligence in communicating erysipe- las to woman in childbirth.....	1
Negligence in suffering patient mentally de- linquent to jump out of unguarded window in private sanitarium	1
Negligent amputation of finger.....	3
Negligence in attending cut severing cords of hand	1
Wrongfully administering morphine	1
Communicating smallpox to patient in hospital	1
Fracture to lower jaw.....	1
Dislocation of knee.....	1
Cancer of stomach	1
Draining of pelvic abscess.....	1
Operation for tonsils without consent.....	2
Negligence in removing button from child's throat	1
Hot water bottle burn.....	1
Failure to discover fractured vertebrae.....	1
Improper treatment of vaginal infection.....	2
Improper treatment of inflammatory rheumatism	1
Negligent removal of tonsils	2
Negligent treatment of gunshot wound.....	1
Negligent treatment of abscess of bladder.....	2
Negligent treatment of abscess under arm.....	1
Wrong diagnosis of sprain of ankle.....	1
Exposing patient to scarlet fever by wrong diagnosis	1
Improper treatment of insect bites.....	1
Total amount of damages claimed in all cases up to date	\$1,541,898.00
Judgments recovered against members	4
Aggregate amount of judgments.....	\$5,275.00
Consultation on cases threatened in which no proceedings were had.....	71
Dutcher, Davis & Hambrecht.	
Iowa City, Iowa, May 6, 1918.	

Dr. Jeannette F. Throckmorton of Chariton then presented a report of the Committee on Health and Public Instruction. Dr. J. W. Kime moved that the report be adopted. Seconded and carried.

REPORT OF COMMITTEE ON HEALTH AND PUBLIC INSTRUCTION

Owing to illness of Dr. Paul E. Gardner of New Hampton, Chairman of the Committee on Health and Public Instruction, the formal report now in his possession bearing dates and places of health meetings, cannot be presented today; but I ask your indulgence for this informal report.

This committee, knowing the public health depends so much upon the education of the public, and feeling that the education will be more readily accepted and absorbed in youth, has endeavored—among other activities—to gain the attention of the students in various high schools and colleges in the State by means of health talks.

We believe that it is immensely more important that a school child should know that tuberculosis is spread by the infected sputum, that influenza is spread by a germ and that we break the Golden Rule every time we sneeze without taking precautions to keep it a strictly private matter, and that the fly the Beelzebub agent of filth, than that he should know the Law of Gravitation, the square of A and B, or be able to glibly recite the German alphabet.

These health talks have gone hand in hand with the Child Welfare and Social Hygiene movements.

The committee work has been congenial and pleasant and fascinating work, as it consists mostly in giving advise—said to be the worst form of vice; and it emphies the words of Bacon:

"I would rather be one, to tell twenty what to do, than be one of the twenty to follow mine own teachings."

Jeannette F. Throckmorton.

Report of the Committee on Finance was read by Dr. J. C. Saunders, Fort Dodge, and on motion, duly seconded, was carried and accepted.

REPORT OF FINANCE COMMITTEE OF THE IOWA STATE MEDICAL ASSOCIATION

Your Finance Committee has checked over the items of receipt and expenditure, as shown in the Secretary's report and the Treasurer's report and find that they are correct and in accordance with the stubs in the Treasurer's check book.

C. J. Saunders, Chairman.

Report of the Committee on Arrangements being called for, Dr. C. J. Saunders stated that a full report of the work accomplished by the committee would be sent to the State Secretary's office as soon as the items on receipt and disbursements could be obtained. (Report follows close of transactions.)

Dr. T. F. Duhigg of Des Moines presented the following resolution, and moved its adoption; seconded and unanimously carried. The resolution is as follows:

I move that it is the sense of this society that it shall be looked upon as an evidence of pro-German sympathies for any member for a period of fifty years, to purchase, or permit any merchant to substitute any book, instrument, appliance, or other article made in Germany or Austria.

NEW BUSINESS

Dr. T. F. Duhigg moved that the Chair appoint a committee of three immediately, one of whom may be the Secretary of the State association, for the purpose of co-ordinating the profession of the State for war work. Seconded and carried. The following named gentlemen were appointed by the Chair: Dr. W.W. Pearson, Des Moines; L. W. Dean, Iowa City; Dr. Tom B. Throckmorton, Des Moines, Secretary.

The following resolution was then presented by Dr. John R. Walker of Fort Madison, who moved its adoption. Seconded and carried. The resolution is as follows:

Resolved, That the Iowa State Medical Society stands solidly behind President Wilson in all he is doing to crush the damnable Hun, and make the world safe for democracy; and that we endorse the war activities of William C. Gorgas, Surgeon-General of the Army. Be it further

Resolved, That the Iowa State Medical Society most heartily endorses the Owen bill, known as Senate Bill No. 3748, and the Dyer bill, known as House File No. 9563; and be it further

Resolved, That the secretary of the society be instructed to send letters to Senators Cummins and Kenyon, and to each of the representatives from Iowa urging their support of these bills.

Dr. L. W. Littig moved that a vote of thanks be tendered to the Webster County Medical Society for the hospitality extended the visiting members of the profession and their wives and guests during the Sixty-Seventh Annual Session of the society. Seconded and unanimously carried.

There being no further business to come before the House, a motion to adjourn was made, seconded and carried, the society to meet in Des Moines, May 7, 8 and 9, 1919.

Tom B. Throckmorton, Secretary.

REPORT OF COMMITTEE ON ARRANGEMENTS, FORT DODGE MEETING, 1918

Receipts

From exhibitors	\$345.00
From banquet tickets.....	379.00
Total	\$724.00

Expenses

Wahkonsa Hotel banquet, 266 plates	\$532.00
Table decorations	10.00
Wahkonsa Hotel, care guests of society	31.50
George Perkins, porter.....	6.00
Two pages	10.00
Messenger Printing Company.....	11.05
F. H. Waters, lantern.....	5.00
Irene L. Platt and two assistant stenographers and registration....	37.50
Mrs. W. F. Fuhrman and accompanist	7.50
Independent Printing Co.	6.00
Quist's Orchestra	13.00
L. Schaffner, sign	4.25
Stamps and stationery	5.25
Damon & O'Meara, blue prints.....	2.90
Grace Meinzer, stenographer.....	5.00
Incidentals	3.75
	<hr/>
	\$690.70
Balance paid State society.....	33.30
	<hr/>
Total	\$724.00
Respectfully submitted,	
C. J. Saunders,	
Chairman Arrangements Committee.	

**REPORT OF THE TWENTY-FIRST ANNUAL
MEETING OF THE STATE SOCIETY OF
IOWA MEDICAL WOMEN, HELD IN
FORT DODGE, IOWA, MAY 7, 1918**

The Address of Welcome was given by Mrs. Seth Thomas of Fort Dodge, President of the City Federated Clubs, and her reminiscences of young women physicians in an early day were very interesting.

Greetings and Welcome were given by Dr. Sara Kime of Fort Dodge, to which Dr. Kate Harpel of Boone responded extemporaneously.

The Symposium on Pediatrics was then taken up. Dr. Laura House Branson of Iowa City gave the President's Address on "Equality as a Birthright," which was a splendid article on this vital and important subject.

In lieu of the paper by Dr. Josephine Rust, Dr. Nelle Noble of Des Moines spoke briefly on the nation-wide "Save the Babies" campaign, which is to be started for the coming year, and urged all doctors to assist in the free examination of children, whenever requested.

"Congenital Malformations and Deformities—Remedies," by Dr. Jeannette F. Throckmorton of Chariton, brought out the thought in closing "that to obtain the best development of the child, the mother should be undisturbed by physical violence or nervous shock" and brought to our minds and sympathies the horrible and atrocious situation of the girl mothers in stricken France and Belgium.

"Infectious Diseases," by Dr. Rosa Lowder of Maquoketa, was a timely paper, showing much thought expended in its formation.

"Focal Infections," by Dr. Nelle S. Noble of Des Moines brought out in an interesting manner the various phases of this important subject.

"Malignancy in Childhood," by Dr. Rose Butterfield of Indianola, treated of this interesting and often unsuspected condition prevalent among the youth of our country.

Through the absence of Dr. Ida G. Rhoades of Cedar Falls because of illness, the paper on "Prophylaxis and Immunity—Role of Vaccines and Serums" could not be given; but Dr. Jessie B. Hudson of Carroll kindly consented to give an extemporaneous talk on this subject, which was indeed splendid and showed her knowledge and practical experience in the making and using of vaccines and serums.

All of these papers were discussed together, and the spirited discussion which followed completed a scientific programme most interesting and instructive, and in a way will help prepare the members of this society for their part in the campaign just begun by the Children's Bureau, to "Save the Babies."

Respectfully submitted,

Jeannette F. Throckmorton,
Secretary Pro Tem.

**COMING MEETING OF THE TRI-STATE
DISTRICT MEDICAL SOCIETY**

The Tri-State District Medical Society extends to the physicians of Wisconsin, Iowa and Illinois a hearty invitation to attend its annual scientific and clinical meeting to be held at the State Capitol Assembly, Madison, Wis., August 20, 21 and 22, 1918.

Madison is a beautiful city surrounded by Wisconsin lakes, an ideal location for a medical meeting at this time of the year. Besides the benefits the members and other physicians will derive from the meeting, it will furnish a splendid outing for the guests of the association.

Our experience has been that the latter part of August and the first part of September is an ideal time for a meeting in this part of the country. The weather is generally cool, and the roads permit the physicians to come from all parts of the three states in their automobiles.

The indications are now that the meeting will be a very notable one. Besides the time devoted to the clinics and the addresses by notable men of the profession, the medical phase of the war will receive considerable attention.

Surgeon-General Gorgas of the United States Army will be a guest of honor at this year's meeting, and he has accepted a place on the program, and expects to be present if war conditions permit.

One of the sessions of the meeting will be devoted to the selective service regulations. At this

meeting there will be a joint conference of the local, district, and medical advisory boards of the three states. Provost Marshal General Crowder of the War Department has kindly designated Major Hubert Work and Colonel Easby-Smith of the Provost Marshal General's office, Washington, to take charge of this meeting.

The Governors of the three states, along with their medical aides, Dr. Rock Sleyster of Wisconsin, Dr. W. W. Pearson of Iowa, and Dr. John Dodson of Illinois, have signified their hearty co-operation in arranging this conference.

Among the notable physicians and surgeons who have accepted invitations as guests of honor at this year's meeting, if war conditions permit, are:

Dr. Arthur Dean Bevan, President American Medical Society; Dr. Alexander Craig, Secretary American Medical Society; Major William J. Mayo, Rochester; Major Joseph Bloodgood, Baltimore; Dr. Edward Davis, Philadelphia; Dr. Charles Burr, Philadelphia; Colonel Frank Billings, Chicago; Dr. Austin Flint, New York; Major Fred Albee, New York; Dr. William Lower, Cleveland; Dr. Carl Davis, Chicago.

Another feature of the program will be twenty-four papers and twenty-four discussions by local physicians from the three states.

The social feature will be observed as usual, and the doctors are invited to bring their wives, daughters and lady friends.

Madison as a medical center is one of the finest in the Middle West. The physicians and hospitals of this city are among the best in the country, and the very fact that the meeting is to be held in this city is synonymous with success. Madison and its physicians extend you a hearty invitation to be a guest at this meeting.

A more complete program of the meeting will appear in the August number of this Journal.

William B. Peck, Freeport, Ill., President.

Nelson C. Phillips, Freeport, Ill., Secretary.

Program Committee:

Dr. W. T. Lindsay, Madison, Wis.

Dr. H. G. Langworthy, Dubuque, Iowa.

Dr. C. L. Best, Freeport, Ill.

OFFICERS AND COMMITTEES OF THE
IOWA STATE MEDICAL SOCIETY,
1918-1919

President.....	Max E. Witte, Clarinda
President-Elect.....	Wm. L. Allen, Davenport
First Vice-President.....	Wm. A. Rohlf, Waverly
Second Vice-President.....	Evan S. Evans, Grinnell
Secretary.....	Tom B. Throckmorton, Des Moines
Treasurer.....	Thos. F. Duhigg, Des Moines
Editor.....	David S. Fairchild, Sr., Clinton

COUNCILORS

Term Expires

First District—John R. Walker, Fort Madison.....	1920
Second District—L. W. Littig, Iowa City.....	1922
Third District—W. A. Rohlf, Waverly.....	1921
Fourth District—Paul E. Gardner, Chairman, New Hampton.....	1919
Fifth District—G. E. Crawford, Cedar Rapids.....	1923
Sixth District—O. F. Parish, Grinnell.....	1923

Seventh District—Channing G. Smith, Granger.....	1919
Eighth District—J. F. Aldrich, Shenandoah.....	1919
Ninth District—A. L. Brooks, Audubon.....	1922
Tenth District—W. W. Beam, Rolfe.....	1921
Eleventh District—G. C. Moorehead, Secretary, Ida Grove.....	1920

TRUSTEES

J. W. Cokenower, Chairman, Des Moines.....	1919
W. B. Small, Waterloo.....	1921
T. E. Powers, Clarinda.....	1920

DELEGATES TO A. M. A.

W. B. Small, Waterloo.....	1919
J. C. Rockafellow, Des Moines.....	1920
M. N. Voldeng, Woodward.....	1920

ALTERNATE DELEGATES

Granville N. Ryan, Des Moines.....	1919
B. L. Eiker, Leon.....	1920
J. C. Langan, Clinton.....	1920

COMMITTEES

MEDICO LEGAL

D. S. Fairchild, Clinton.....	1921
H. B. Jennings, Council Bluffs.....	1919
Lewis Schooler, Des Moines.....	1920

HEALTH AND PUBLIC INSTRUCTION

Paul E. Gardner, New Hampton.....	1921
Jeannette F. Throckmorton, Chariton.....	1920
Henry Albert, Iowa City.....	1919

CONSTITUTION AND BY-LAWS

D. C. Brockman.....	Ottumwa
V. L. Treyner.....	Council Bluffs
M. J. Kenefick.....	Algona

CONSERVATION OF VISION AND HEARING

H. G. Langworthy.....	Dubuque
T. U. McManus.....	Waterloo
F. E. V. Shore.....	Des Moines

PUBLICATION

D. S. Fairchild.....	Clinton
W. L. Bierring.....	Des Moines
C. P. Howard.....	Iowa City

SCIENTIFIC WORK

Max E. Witte.....	Clarinda
Tom B. Throckmorton.....	Des Moines
Thos. F. Duhigg.....	Des Moines

FINANCE

C. P. Frantz.....	Burlington
C. J. Saunders.....	Fort Dodge
J. W. Harrison.....	Guthrie Center

PUBLIC POLICY AND LEGISLATION

W. L. Bierring.....	Des Moines
Harry P. Engle.....	Newton
Geo. E. Decker.....	Davenport
Max E. Witte.....	Clarinda
Tom B. Throckmorton.....	Des Moines

ARRANGEMENTS

Max E. Witte.....	Clarinda
Tom B. Throckmorton.....	Des Moines
Thos. F. Duhigg.....	Des Moines
Two members from Polk County Medical Society.	

WAR COMMITTEE

W. W. Pearson.....	Des Moines
L. W. Dean.....	Iowa City
Tom B. Throckmorton.....	Des Moines

Next meeting of the Iowa State Medical Society will be held at Des Moines, May 7, 8 and 9, 1919.

SOCIETY PROCEEDINGS

The Appanoose County Medical Society held its regular meeting June 25 at the Assembly Room St. Joseph's Hospital, Centerville. The program consisted of a symposium on biologic products—five minutes talks on clinical experiences with small-pox vaccine; dyptheria anti-toxin; typhoid vaccine; anti-tetanus serum; anti-meningitis serum; gonococcic vaccine; acne-vaccines; tuberculin vaccine; pneumococcic vaccine; and anti-streptococcic vaccine. Reels showing the production of the various vaccines and serums, and the preparation of the Carrel-Dakin solution, were furnished through the courtesy of the H. K. Mulford Company.

The Boone County Medical Society held its regular meeting June 27 at Ogden. The meeting was in the nature of a farewell courtesy to Capt. N. M. Whitehill and Capt. Maurice Healey, of Boone, who have been ordered to Fort Oglethorpe, Ga.

The members of the Cerro Gordo County Medical Society met at the Country Club, Mason City, June 17, where a banquet was given in honor of Major C. L. Marston, who was home on a furlough from Fort Oglethorpe, prior to assuming his duties as chief of the surgical staff, base hospital, Camp Wadsworth, South Carolina.

At this gathering interesting letters were read from other members of the county society in the service, namely, Capt. S. A. O'Brien, at Fort Meyer; Lieut. T. A. Willis, Howard University; Major E. A. Graham, Camp Lee.

At a recent meeting of the Hardin County Medical Society, held at Eldora, the following resolution was adopted, and a copy forwarded to the Council of National Defense:

Whereas, In the selective draft of physicians now conducted by the National Council of Defense in response to the call of Surgeon-General Gorgas, for 5,000 men for the medical reserve corps; and

Whereas, Two physicians are to be called from Hardin county on this first call; therefore, be it

Resolved, That the names of Drs. D. O. King of Eldora and C. M. Wray of Iowa Falls be recommended by this committee to the Council of National Defense as those best situated and suited to respond to the call.

(Signed) Nathan C. Morse, Chairman;
J. F. R. Brubaker,
B. E. Purcell,
R. R. Gaard, Secretary.

The midsummer meeting of the Johnson County Medical Society was held at Reichardt's Pavilion, City Park, Iowa City, July 3, beginning at two-thirty P. M. with the scientific program. At five-

thirty a bounteous luncheon was served in the dining room of the pavilion.

The scientific program was: Thrombosis from Contusion of the Arteries of the Lower Extremity, Dr. D. S. Fairchild, Clinton. Traumatic Rupture of the Urinary Bladder, Dr. O. J. Fay, Des Moines. Foreign Proteins as Therapeutic Agents, Major Joseph M. Miller, Camp Dodge and Chicago. The X-Ray in the Diagnosis of Pneumonia and its Complications, (lantern slides) Major W. G. Alexander, Camp Dodge and Evanston. Stone in the Kidney and in the Ureter, (lantern slides) Dr. N. G. Alcock, Iowa City.

The physicians were accompanied by their wives and friends, who contributed to the social features.

The June meeting of the Polk County Medical Society was held June 25 at the Chamberlain hotel. Dr. F. A. Ely read a paper on Clinical Observations in Migraine, and Dr. Howard D. Gray presented a paper on Surgical Anomalies.

The Poweshiek County Medical Society held its regular meeting June 21 at Brooklyn, when Dr. C. D. Busby of Brooklyn read a paper on "Management of Pneumonia in the Army". The paper brought out an interesting discussion.

At this meeting a committee was appointed for the purpose of considering uniform mileage rates for the entire county.

Out of a membership of twenty-one, seventeen members were in attendance.

The members of the Taylor County Medical Society met at Platteville, June 18, as the guests of Dr. and Mrs. J. P. Standley. The members were accompanied by their wives.

DEATH OF LIEUTENANT-COLONEL TODD

Lieut.-Col. Frank C. Todd, commanding officer at the base hospital, Camp Dodge, Iowa, died at the Presbyterian Hospital, Chicago, July 4, from pneumonia.

Colonel Todd had recently been on an inspection trip to the various cantonments, and was taken ill while at Camp Custer, Battle Creek, Mich. He had just been recommended for the command of an "over seas" base hospital.

Prior to entering the service, Colonel Todd was an eye, ear, nose and throat specialist at Minneapolis. A wife and four children survive him.

DEATHS

Ida Grant Rhoades, M.D., Cedar Falls, aged 38; Drake University College of Medicine, 1909; Fellow of American Medical Association; member of Iowa State and Blackhawk County Medical Societies; secretary of the State Society of Iowa Medi-

cal Women; a practitioner at Cedar Falls for the past seven years, died at her home, June 20, from neuritis.

Warren Lee Hummer, M.D., Greenfield, aged 44; University of Nebraska College of Medicine, 1904; died at Immanuel Hospital, Omaha, May 28, from injuries received in lifting an automobile.

MARRIAGES

Lieut. Walter E. Foley, M. R. C., U. S. Army, of Davenport, to Miss Ina Mary Gleason, of South Haven, Mich., at Chicago, May 20.

Dr. Edward R. Posner, to Miss Rose Mahoney, both of Des Moines, June 22.

Dr. Loren K. Meredith, of Des Moines, to Miss Irene S. Hix, of Ludington, Mich., at Ludington, June 22.

Dr. John R. Black to Miss Mary Bussey, both of Jefferson, at Madrid, June 16.

Dr. Harold Van Metre, of Iowa City, to Miss Marion Stuckslager, of Lisbon, June 26.

Dr. James C. Kessler, of Iowa City to Miss Ethel Sayre, of St. Charles, July 2.

BIRTHS

Dr. and Mrs. L. M. Nourse, Des Moines, April 8, a daughter.

Dr. and Mrs. E. D. Allen, of Hampton, April 28, a daughter.

Dr. and Mrs. N. G. Alcock, of Iowa City, June 5, a son.

ARMY NEWS

Major Chas. E. Ruth, of Des Moines, has been ordered from Camp McHenry to Manilla, Philippine Islands, for duty.

Capt. G. A. Spaulding, of Avoca, has been ordered to Camp Lewis, American Lake, Wash.

Word has been received of the safe arrival in France of Lieut. Frank A. Will, of Des Moines; also of Major Daniel J. Glomset, Des Moines.

MEDICAL NEWS

Dr. Benjamin Thompson, of Tama, has been critically ill with kidney and gall bladder trouble.

Dr. and Mrs. T. E. Powers, of Clarinda, are spending a portion of the summer in southern California.

Dr. Max Emmert, of Omaha, formerly of Atlantic, sustained a broken arm recently in an automobile accident which occurred on a return trip from Atlantic to Omaha.

Dr. Wm. Jepson, of Sioux City, has recently been commissioned Major in the medical reserve corps.

Dr. J. E. King, of Eldora, recently celebrated the ninety-third anniversary of his birth. Dr. King came to Eldora in 1861.

The summer meeting of the Southwestern Iowa Medical Society will be held at Shenandoah, August 29.

CHANGES OF LOCATION

Dr. Frank S. Johnson, of Sioux City, has removed to Bronson.

Dr. W. A. Runkle, of Cedar Rapids, has located at Lowden.

Dr. Elliott C. Cobb, of Sioux City, has removed to Harlan.

Dr. H. C. Schmitz, formerly of Marshalltown, has located in Des Moines.

Dr. R. M. Wallace, of Titonka, has removed to Algona.

Dr. Carl Stutsman, of Burlington, has removed to Des Moines to become the medical director of the Merchants Life Insurance Company.

Dr. D. L. Youngs, of Low Moor, has removed to Mechanicsville.

Dr. L. J. Bowman has removed from Masonville to Manchester.

Supplement to list of Iowa physicians who have been recommended by the Surgeon-General for commissions in the Medical Officers' Reserve Corps.

Edward D. Morrison, Capt., Barnum.

Nelson McPhee Whitehill, Capt., Boone.

Paul Oren Anderson, 1st Lieut., Bouton.

Frank Nathan Mead, Capt., Cedar Falls.

Frank Leroy VanderVeer, Capt., Cedar Falls.

Victor Hugo Hasek, 1st Lieut., Cedar Rapids.

Chester Harvey Johnson, 1st Lieut., Cherokee.

Louis O. S. Wallace, 1st Lieut., Cherokee.

James Warren Woodbridge, Capt., Cylinder.

Herbert Morgan Decker, Capt., Davenport.

David Munsen Nyquist, 1st Lieut., Eldora.

Albert Edward Acher, 1st Lieut., Fort Dodge.

Sumner Bereman Chase, 1st Lieut., Fort Dodge.

Benjamin Lyle Meigs, 1st Lieut., Fort Dodge.

Austin Clifford Davis, 1st Lieut., Iowa City.

Wilber Diven, 1st Lieut., Iowa City.

Wayne Jones Foster, 1st Lieut., Iowa City.

Matthew Taylor Morton, 1st Lieut., Iowa City.

Harry Raymond Secoy, 1st Lieut., Iowa City.

Malcolm Duncan Winter, 1st Lieut., Iowa City.

Coral Ray Armentrout, Capt., Keokuk.

Frederick Cornelius Nilsson, 1st Lieut., Laurens.

Hollis Sherman Thomas, 1st Lieut., Oakdale.

William Jepson, Major, Sioux City.

Walter Martin Skallerup, 1st Lieut., Walker.

Raymond Lee Latchem, 1st Lieut., Walnut.

BOOK REVIEWS

MEDICAL WAR MANUAL No. 5

Lessons From the Enemy. How Germany Cares for Her War Disabled. By John R. McDill, M.D., F.A.C.S., Major, Medical Reserve Corps, U.S. Army. Lea & Febiger, Philadelphia and New York.

Number 5 of this series differs from the preceding volumes, by giving us a resume of various matters gleaned from the personal knowledge of the author, during a service abroad with hospital units working with the Central Powers, rather than the information concerning what are our own methods. The author, in the preface cites the need of doctors, an item at present very urgent, as a need only dimly realized as yet, and urges the obligation resting upon the members of the medical profession to volunteer gladly and freely, to fill the ranks of the Army Medical Corps. The book deals with the German Medico 6-Military Organization in war, and its administrative methods, both in the sanitary service as a whole and in base hospitals in particular. It considers the medical and surgical aspects of the war, the Volunteer Nursing and Red Cross work, and goes at some length into the question of re-education of those disabled in the war, following this with chapters on Orthopedic work, and the questions concerning artificial limbs, or prostheses.

The appendix contains circulars issued to disabled soldiers in Germany with a plea for them to return to light farming as a pleasant occupation, and as a duty; also a description of national and communal war relief work. Altogether the volume is a most valuable member of the list of medical war manuals and well repays the reader.

Capt. H. R. Reynolds, M.R.C.

MEDICAL WAR MANUAL No. 6

Laboratory Methods of the United States Army. Compiled by the Division of Infectious Diseases and Laboratories. Lea & Febiger, Philadelphia and New York.

This book, compiled largely by members of the Surgeon-General's staff, contains also much material drawn from standard works on the subject. It is not intended as a text-book, but as stated in the preface, rather as a means of establishing uniformity of procedure in the Army laboratories, and as a collection of formulae and of methods of technique, useful in both stationary and mobile laboratories. It is not necessary to discuss any of these methods at length, as they are those found by past experience to be of the most general reliability and usefulness.

The scope of the work is shown by the arrangement of the contents: First, directions for the collection and shipment of specimens and materials; then a chapter on Stains and Solutions, sections on Clinical Pathology, Quantitative Analytical

Methods, General and Special Bacteriological Methods, Sanitary Examination of Milk, and of Water and Sewage.

While, as before stated, this is not to be considered as a text-book, any laboratory worker, whether be he in the Army or not, may well acquire this volume as a real addition to his library, and as a tool for his work.

Capt. Harry R. Reynolds, M.R.C.

MEDICAL SERVICE AT THE FRONT

By Lieut.-Col. John McCombe, C.A.M.C., and Capt. A. F. Menzies, M.C., C.A.M.C. Lea & Febiger, Philadelphia and New York. Price, \$1.25.

This book, uniform with the series of Medical War Manuals published by this house, contains an account of the methods of work and of administration of the Canadian Medical Corps, which of course corresponds with that of the English R.A.M.C.

While differences exist between these methods and those of the U.S. Army Medical Corps, the general principles of both are practically the same, and a knowledge of the system employed by the R.A.M.C. will prove of value to the American medical officer and will be of interest to the profession generally, especially to those who contemplate entering the service.

The first chapter deals with the disposition of a division in the front line, information as to military formation being requisite to co-ordinate action by the Medical Corps.

Then the authors give an analysis of the multi-form duties of the Regimental Medical Officer, following this with chapters dealing with the Field Ambulance, corresponding to the Field Hospital of the U.S. Army, its use in Peace Warfare, as when in defensive position, in Battle, or offensive, and describing the selection of Field Ambulance positions.

Next we learn of the work of the Assistant Director of Medical Services and are given an explanation of the Corps system as applied to Medical Officers and to the Sanitary Sections, with a statement of the administration of medical arrangements with Cavalry.

The book closes with the Casualty Clearing Station, corresponding to the American Evacuation Hospital, showing its administrative arrangements and how it is handled, according to the varying conditions of offensive, defensive, and rest periods.

Capt. Harry R. Reynolds, M.R.C.

A MANUAL OF CLINICAL DIAGNOSIS BY MEANS OF LABORATORY METHODS

For Students, Hospitals, Physicians and Practitioners. By Charles E. Simon, B.A., M.D. Professor of Clinical Pathology. (Continued on Adv. Page xiv)

*Our facilities make us
headquarters for the
Organotherapeutic Agents*



The Best costs no more than—

The physician will be pleased to learn that his patient can now get Armour's Corpus Luteum, Powder, 2- and 5-grain capsules and 2-grain tablets, at a reduction of approximately 33⅓% from former prices.

Corpus Luteum (Armour) is the true substance made from material selected in our own abattoirs, and will give results.

Armour's Surgical Catgut Ligatures

are smooth, strong and sterile. Sizes 000 to No. 6 inclusive. Plain and Chromic, 5-foot lengths. Emergency (20-inch lengths).

Pituitary Liquid (Armour), ½cc and 1 cc ampoules, is free from preservatives. ½cc obstetrical, 1cc surgical.

ARMOUR AND COMPANY
CHICAGO

2415

Atophan Adviser

No. 2

Atophan in "Rheumatism"

*Full Information and Clinical
Literature from*

Schering & Glatz, Inc.
150-152 Maiden Lane, New York

"RHEUMATISM" is still a rather vague diagnosis for a group of conditions irrespective of their causation. But with pain, inflammation and congestion ever present, Atophan treatment is always in order.

You have, no doubt, in your practice frequent cases of Articular Rheumatism in which salicylates fail to act and now only upset. Switch to Atophan. You will find it good advice.

And here is why Atophan does better than salicylates, especially in Acute Articular Rheumatism: Quicker abatement of subjective symptoms, absence of profuse diaphoresis, constipation and cardiac by-effects.

Atophan cannot figure, of course, in the curative treatment of Gonorrheal Rheumatism. However, the marked respite from actual suffering, readily obtainable by its use, makes patients ever so much more tractable for specific measures.

ATOPHAN—Made in U. S. A.—is furnished in

*Tablets, each 7½ grains, twenty in box.
Powder, in cartons of one ounce.*

*Up-to-date druggists have it in stock. If yours has not,
please let us know.*

BOOK REVIEWS

(Continued from Page 278)

ogy and Physiological Chemistry in the University of Maryland Medical School and the College of Physicians and Surgeons, Baltimore, Maryland. Ninth Edition Enlarged and Thoroughly Revised. Illustrated with 207 Engravings and 28 Plates. Lea & Febiger, Philadelphia and New York, 1918. Price, \$6.00.

The importance of laboratory methods of diagnosis has come to be so fully recognized that many books bearing on various features of the subject have appeared and new editions of long established standard works on general methods of laboratory diagnosis have been in great measure rewritten to bring them up to date and considerable new matter added. This applies to Simons Clinical Diagnosis. This book deals with laboratory technic and is particularly adapted to the use of advanced medical students and to hospitals. No hospital worthy of the designation can be without a thoroughly equipped laboratory and a trained pathologist. The methods of clinical diagnosis from the standpoint of the laboratories are so complex that investigations to be of material value must be conducted with full time workers with time for patient, accurate work. In relation to the subject of blood examinations the author outlines the apparatus and solutions necessary and points out the technic employed by himself and others for complete examinations of the blood in different pathologic conditions so essential to a right understanding of clinical facts. There are so many important pathological conditions revealed by blood examinations that many pages are devoted to accepted technic and the significance to be given them. Following comes the examinations of the secretions; microscopical and bacteriologic, examination of the feces and sputum. So much is revealed by the urine that nearly 200 pages are devoted to the chemical and bacteriological examinations of the fluid. Not a little misleading information is given by many who lay claim to a knowledge of urinalysis, so that this section of the book is urgently recommended to the attention of physicians who should know more of the accurate technic. The examinations of cerebrospinal fluid, of exudates and transudates and of pathogenic organisms are carefully considered. The second part of the work is devoted to the Essential Factors in the Laboratory Diagnosis of Various Diseases. This section brings into view the utilizing of the various methods and technic already considered in their application to disease, their helpful value in diagnosis and treatment. The student should have a fair knowledge of the contents of Simons work when he enters upon the serious business of practicing medicine and should continue to have at hand this valuable book in his hospital service.

1810 Calories Per Pound

Oats yield 1810 calories per pound. Meats, fowl and fish average about 750 calories per pound.

For the same nutrition, meats will average from 8 to 10 times the cost.

White bread, pound for pound, is but 41 per cent as nutritious as oats. And wheat must be conserved.

Oats are rich in minerals. With milk, they form a complete food.

There is every reason in these days for fostering the use of oats.

Quaker Oats

Quaker Oats are flaked from queen oats only—just the rich, plump, luscious grains. We get but ten pounds from a bushel. The exquisite flavor which results makes this the favorite brand. Yet it costs no extra price.

The Quaker Oats Company

Chicago

(1945)

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, AUGUST 15, 1918

No. 8

ACUTE ABDOMINAL PERFORATIONS*

F. W. CRAM, M.D., Sheldon.

It is my purpose to base what I have to say at this time upon the subject of Acute Abdominal Perforations, and in considering it, the subject naturally divides itself into spontaneous perforations due to pathological conditions already existing in the abdomen, and into those due to traumatism.

In reviewing the published literature regarding the matter, one finds it a little difficult to realize that the present understanding of these abdominal conditions and their management is of such recent date, and in fact, that it has been largely developed and perfected by men still living.

The earliest mention in medical literature of a duodenal ulcer was made by Mr. Treves, of London, in 1817. He described in detail the clinical history and post mortem findings, but it is fair to conclude that he did not realize the importance of his findings or understand the relations between the perforation and the previous condition. In 1830 Dr. Abercrombie of Edinburgh mentions a specimen in the museum of the Royal College of Surgeons in which perforation had occurred, and in describing the ante mortem symptoms said; "The leading peculiarity of diseases of the duodenum, so far as we are at present acquainted with it, seems to be that the food is taken with relish, and the first stage of digestion is not impeded; but the pain begins about the time that the food is leaving the stomach, or from two to four hours after a meal." This paper seems to have attracted little attention, and the matter was forgotten. The first paper dealing specifically with this subject appeared in 1861, but dealt entirely with perforating ulcers. The disastrous results following perforations of stomach and duodenal ulcers seem to have been the stimulus leading to the study of the clinical aspects of the condition leading up to the perforations. In 1893 Dr. Per-

ry gave a most exhaustive report of nearly 18,000 autopsies held at Guys Hospital, London, between the years 1829 and 1892. He pointed out the frequency of ulcers and indicated the relation between these and the fatal perforations. Up to this time it had not been considered that perforations of ulcers was a matter of any importance to the surgeon.

In 1894, H. P. Dean, of London, recorded the first case of perforating ulcer treated surgically, followed by L. A. Dunn, in 1896. Following the publication of these successes, there were many other cases reported. Moynihan operated his first case in 1900, and published the first paper dealing with the various aspects of the disease from a surgical standpoint.

Weir's presidential address before the American Surg. Association in 1900, dealt with the matter of perforating ulcers. He gave an exhaustive review of the literature up to that time; etiology, symptoms, and treatment from a surgical standpoint.

The various papers published by the Mayos, Mayo-Robson, Deaver, Moynihan, and others have added very materially in placing the whole matter upon a sound surgical basis.

Perforation of the appendix is the most frequent source of abdominal perforations. In 1827 Meier gave a most perfect description of the different forms of inflammation of the vermiform appendix. His description of the clinical appearance of the trouble was nearly as perfect as found today. He remarks that if it were possible to make an accurate and early diagnosis, that surgical treatment should be used. The writer was a student at Rush during 1876 to 1878. The magnificent and talented surgeon, Moses Gunn, held the chair of surgery, and was the chief surgeon to Cook County Hospital. In this service there was presented several cases of typhlitis and perityphlitic abscesses, usually resulting fatally, and they were posted at the morgue by the pathologist, Dr. I. N. Danforth. The frequency of an ulcerated or gangrenous appendix was pointed out, but the imperious Gunn could not see anything but a result, and not a

*Read at the Sixty-Seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 8-9-10, 1918.

cause. Nor could he at this time accept the teachings of Lister. "We have another example of how difficult it often is for extremely talented men to disabuse their minds of old and deep-rooted theories and mistaken standpoints, in Billroth, who, in 1880, fourteen years after Lister had announced his method, declared this to be a delusion, maintaining that though microbes were certainly found in a wound inflammation, they were a result and not the cause of the inflammation." Holmes' System of Surgery, published in 1881-2, does not mention the matter of inflammation of the appendix, but deals quite elaborately with "Fecal Abscess and Typhlitis," and states; "The appendix caeci was found ulcerated through at the extremity, but no solid substance could be found to account for the ulceration by its pressure or in any other way."

Reginald Fitz, of Boston, is entitled to the credit of indicating the proper relation of fecal abscess to the appendix. In a paper published in the Journal of the American Medical Sciences in 1866, and again in 1888, he pointed out that the symptoms of acute inflammation of the appendix was the same as those formerly considered as indicating a fecal abscess, and that the symptoms were in fact due to the appendix inflammation as a cause of the abscess. H. B. Sands, of New York, was the first to operate a case of inflamed appendix during the course of the inflammation. McBurney, J. B. Murphy, Robert Morris, J. B. Deaver, and Ochsner, and many others too numerous to mention at this time, have rendered services in blazing the way for surgery of the appendix.

An acute perforation into the abdomen from whatever source, is one of the most serious accidents that can happen to a patient. His life and future usefulness depends upon a correct and early diagnosis. It is a time when the judgment exercised by the attendant will determine whether the patient will live or die. There is but little time to deliberate. A firm and determined conclusion must be made at once. Medical treatment is dangerous, ineffectual, and a wasting of valuable time. Surgical assistance to be of avail must be instituted before secondary destructive tissues changes have taken place. If perchance such a patient should escape with his life, he does so with a crippled abdomen, subjecting him to the dangers of secondary adhesive obstructions and all kinds of intestinal inefficiency. Bamberger has recently collected statistics in 513 cases of spontaneous perforations into the abdomen treated surgically from 1906 to 1909, with a mortality of 42.1 per cent; perforations treated within the first twenty-four hours, 32

per cent; after the first forty-eight hours, 41 per cent, and still later, 60 per cent. These figures will hardly be considered correct at this time, but they will serve to indicate the great necessity of prompt surgical relief. The conditions which rapidly develop in the abdomen following a perforation from the stomach, duodenum, gall-bladder or appendix, are such that nothing can be more clear and rational, judging from statistics and surgical experience, than that the only correct treatment in any case of perforation is the early opening of the abdominal cavity, search out the perforation, close the opening, remove the material that has already escaped, and to provide adequate drainage. Recent experience has shown that nearly every case of acute perforation can be cured, if the case is brought to operation within a few hours after the perforation has taken place.

Reports coming from the battlefields indicate a very large mortality from perforating gun shot wounds of the abdomen. The condition under which the injuries are received in France are very different from those existing in private practice. The patient is very apt to be exhausted physically by prolonged marching, or duty in the trenches—his body and clothes are dirty with a germ infected soil, which is carried into the wound by the missile. He may lay for hours or days upon the ground before he arrives at a base hospital where treatment is instituted. Under such conditions the result of late surgical treatment can be but little better, if any, than if left to nature's resources. But in those cases where treatment is begun within the first six hours after injury, a mortality three times less is shown than in those left without operation.

These *spontaneous* cases, however, unfortunately do not always occur in such convenient localities as to permit of prompt surgical treatment in ideal surgical surroundings. Within the limits of a city of course this is not true. But there are localities in the farming districts of Iowa, where the distance between the patient and the nearest hospital will not permit of this promptness. But thanks to modern facilities of transportation, these difficulties are being overcome, and the ever increasing number of competent surgeons throughout the country, these patients may be in competent hands within a few hours, if only the attending physician who is called in is capable of making, and does make the correct diagnosis at the right time, and points out the necessary course to be followed. This is the day of the specialist, and of specialized work. The value and importance of the general practitioner is liable to be overlooked. This is a mis-

take, for the importance and responsibility of his position are just as full of honor as the operator in the matter of determining which are the critical cases and the methods to be adopted for relief. The position calls for the broadest judgment and keenest discrimination. The call is for the right assistance and at the right time. The altruistic influence of the F.A.C.S. will aid him in taking the right direction. It is a question as to whether the patient's interests are conserved in a case of acute perforation by the best transportation over the country roads, or by rail, for any considerable distance, in order to reach a suitable hospital for treatment. Hours count for everything, and the delay and agitation of the patient's body is a beautiful method of spreading the offending material and increasing the peritoneal irritation and toxemia. If the patient's surroundings are not absolutely deplorable, an operating room in the home can be improvised in which results can be obtained that will compare favorably with those obtained in the classical hospital operating room. The condition is positive and urgent, the advantages are comparative.

At a meeting of the American Medical Association at Minneapolis, Dr. John B. Deaver, in discussing this point said: "The treatment of perforated abdominal ulcer is not for agricultural doctors, but should only be by the most skillful surgeons, and in the best equipped hospitals." No one can question the force of the above statement, but there are many cases occurring in the country, in agricultural sections, where neither the most skillful and experienced surgeons nor the finest equipped hospitals are quickly available. Then the clever agricultural doctor must make the best of the situation as he finds it, and deal with the case as it is.

Do the symptoms in any case of abdominal perforation present such a typical character as to make a diagnosis, certain and easy? Unfortunately no. To establish in a few words the principles of clinical investigation, I should say, "First listen and interrogate, then observe, and afterwards feel; but above all, think quickly and logically over what you hear, see, and feel."

In considering the symptoms of acute spontaneous perforation, a very necessary division should be made between those due directly to the perforation, and those that follow and are due to the result and after development.

When a perforation occurs, there is developed a severe agonizing pain. There is no pain so severe, and death may result from the shock in a short time. The pulse is not disturbed at this time as a rule to any great extent. The collapse

is not marked. The surface of the body may be a little cold. The abdomen is markedly retracted and the rigidity is boardlike and unyielding. The diaphragm, being a muscular structure is also rigid, making the respiration superficial and jerky. The abdomen is more or less tender but this tenderness is not distinctly localized.

In perforations into the upper abdomen, the pain and the expression of inexpressible agony is more marked than in the lower abdomen. These symptoms, coming on suddenly, are sufficient to justify a provisional diagnosis of perforation somewhere in the abdomen. Following this there is more or less speedy development of the secondary symptoms due to the escape of material into the peritoneal cavity, and the pathological changes that naturally follow. The pulse rate gradually increases and as the rate increases the quality becomes worse—it is small and thready, and more or less irregular. The tenderness becomes greater and more localized. Tympanites becomes greater until the abdomen is hard and unyielding. The temperature, which at first was below normal, gradually rises to 101 or more. The rapid breathing continues, the face becomes livid, the extremities are cold and damp. Capillary cyanosis develops, followed by death.

It may be well to mention a curious fact so often present following an accident of this kind. It is the complete subsidence of the symptoms mentioned and the substitution for a time, of a sense of complete well being. The patient will decline all proffered aid, feeling assured that the trouble is passed. He may persist in his opposition until the secondary tissue changes have resulted in serious damage. The abdominal rigidity will usually persist more or less marked throughout the subsidence, and can be relied upon, if present, as positive proof that the trouble still exists.

The abbreviated symptoms mentioned will not prove conclusively the presence of a perforation nor its locality, but they will indicate a strong probability, and are sufficient to warn against a line of management that will obscure a dangerous condition, and make a later conclusion more difficult. A glance at the anamnesis will provide valuable aid both in a diagnostic way and in pointing to the probable source of the perforation.

Having decided upon an operative course, much can be done for the comfort and safety of the patient and in the way of restraining the progressive damage. A hypodermic of morphine may now be given. Previous to an assured diagnosis and an agreed operative course, it obscures

the existing conditions, and is misleading and dangerous. Camphor oil and caffeine are valuable in counteracting collapse, and in the presence of prolonged shock operation should not be delayed. Advancing peritoneal inflammation and toxemia or bleeding may account for the prolonged shock.

In traumatic perforations of the urinary bladder, with escaping urine into the peritoneal cavity, a very important caution against catheterization has been pointed out by W. J. Mayo. The disastrous result of the most cautious catheterization have been verified.

The operator will have in mind a picture of the location and condition of the perforation until the abdomen is opened; as soon as this is done he will begin to adjust his picture to suit the findings. The character of the peritoneal contents will aid in adjusting his ideas. If the perforation is of the stomach or duodenum he will secure the opening and wipe out the escaped contents and irrigate the irritating substance if need be. The material from these sources will not be infectious to any great extent and may safely be irrigated. If he finds a bile stain he will be guided to the gall bladder as a source. Here he may find a localized abscess containing concretions or no limiting adhesions at all. Will he remove the gall bladder or sew it up? Both methods have their advocates. If the damaged tissues will permit of restoration, it should be retained. It is largely a matter of personal equation. In the language of the Boston poet, "John says cut it out, Charlie says sew it up." If there is free gas and a quantity of feculent pus found the odor of a streptococcic, colonic infection will be recognized as from the appendix, which calls for relief. In this case the adhesions are freely divided and thorough and complete drainage provided. Every effort should be made to spread this intensely infectious material, as little as possible. Dry sponging is resorted to for the purpose of absorbing every particle of pus with as little damage as possible. Drainage tubes should reach to the bottom of every source of accumulation.

Some experiments have been made with Dakins solution for the purpose of observing its effect upon the peritoneum.

Two cases of septic accumulation in the peritoneal cavity have been treated with Carrel's tubes with gratifying results.

If the patient has typhoid fever, the lower ileum should be investigated.

If the patient is a woman, and the history corresponds and the symptoms of hemorrhage pre-

dominate you will proceed swiftly and cautiously in the direction of the fallopian tubes.

The patient's resources should be conserved in every way possible; *Hypodermoclysis should be given during operation* and remember that the amount of operative shock is directly in proportion to the length of time of exposure and the amount of handling of the abdominal contents.

During the past few years there has sprung up in many of the smaller towns in Iowa a large number of the so-called "small hospitals." The excuse for the existence of these small hospitals has grown out of the need for prompt and efficient aid to such cases as have been described, and to other emergency cases. Many of these institutions have provided laboratory and other equipment and are doing satisfactory work. Some of them are not organized upon the broad basis which includes the internist and the public, but have limited their efforts largely to emergency work. As a result the idea in these communities, has been to associate hospitals closely with surgery, and not as institutions worthy of confidence, where the sick can be better cared for. More recently the public have been more closely associated with the profession in the organization, building, and equipping and managing of these hospitals.

The hospital situation is a matter of evolution. The equipment and management of these places has made rapid strides toward perfection in the last few years. There is no doubt need of elimination and readjustment in both large and small hospitals. The College of Surgeons is making creditable and active effort towards a satisfactory standardization and an equitable solution of the complex subject. At this time they are temporarily halted in their efforts on the western front, just short of perfection, and behind this statement, in part: "Our work is to keep the people well, to overcome disease in the swiftest way known to medical science, and at as a low cost as most efficient business methods will permit. This is work which we willingly accepted. Having accepted it we must dedicate ourselves to it. We must be sober, industrious, wise and unselfish. They are now concentrating their forces behind this altruistic proposition, and will soon be ready to make the next idealistic drive to a final conclusion. Then as a reward for services we will be told:

"Only the Master shall praise us, and only the Master shall blame;
And no one shall work for money, and no one shall work for fame;

But each for the joy of working, and each, in his separate star,
Shall draw the Thing as he sees it for the God of things as they are."

CHOICE OF OPERATION IN FRACTURES*

A. P. STONER, M.D., F.A.C.S., Des Moines

The advent of the X-ray marked the beginning of modern surgery for recent fractures. Until radiographs began to reveal the deformities and in numerous instances exaggerate them, the profession and laity alike were satisfied with the fair functional results generally obtained. At the present time there is a universal demand for accurate anatomical approximation as well as good functional results. The courts now hold the surgeon liable for any deformity resulting from the treatment of fractures. The proverbial bump following fracture of the clavicle has enlisted among its objectors the shopman as well as the aesthetically inclined.

Operative measures for fractures have been practised for centuries and a variety of materials have been utilized as means of repair in at-

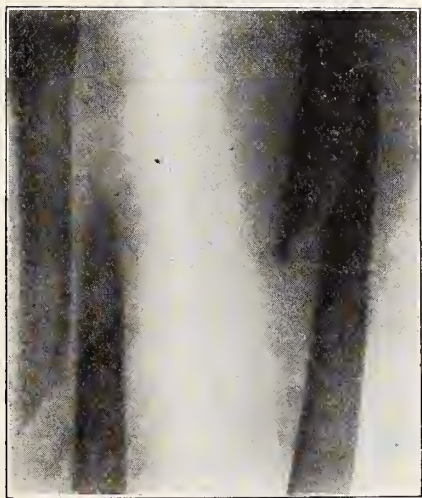


FIGURE 1—Oblique fracture femur

tempting to overcome deformities or to supply defect silver wire, screws and plates, of the older days still are an important part of the modern equipment.

The ushering in of the antiseptic and aseptic era was somewhat disappointing so far as open bone and joint surgery were concerned.

"Letting out the joint-water" continued to be a grave procedure for the surgeon as well as

in the minds the laity. Joint operations frequently resulted in ankylosis and foreign bodies were almost as offensive to bone as they were in preantiseptic days.

It remained for Sir Arbuthnot Lane to perfect the new technic which in his hands and others who have mastered it, stand today

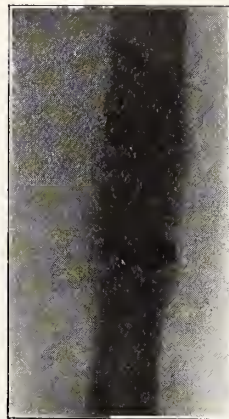


FIGURE 2—Same as Figure 1 after Parham and Martin bands have been applied.

absolutely unimpeached. So exacting was the technic that few of his followers employed it in detail, hence bad results were constantly being reported. Eventually a terrific storm of indignation broke out in England against the operative treatment of fractures as practised by Sir Arbuthnot Lane. Finally he was obliged to defend himself before the council of the British Medical Association. A committee was appointed to investigate and report on his work. The committee was a large one and contained the names of J. Rutherford Morrison, Victor Horsley, Herbert Patterson and many other no-

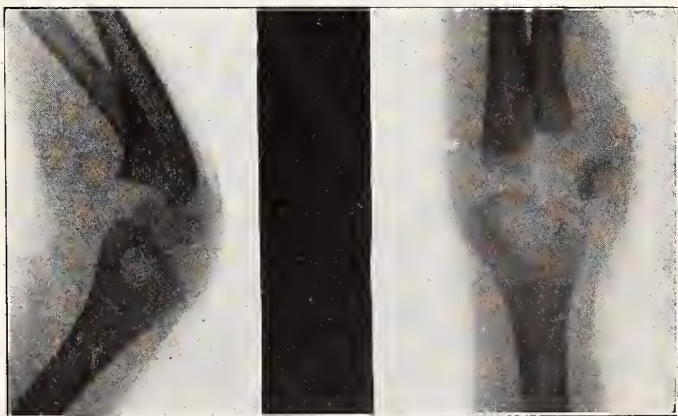


FIGURE 3—Fracture external condyle humerus, child

table surgeons. Several months were consumed in the investigation. Their report was filed in November, 1912, and to use Lanes' own words it verified up to the hilt every thing he had

*Read before the Polk County Medical Society, April 30, 1918.

claimed for it. All credit then must go to this intrepid surgeon for the great accomplishments and advancements in bone and joint surgery since the adoption of his methods.

But for this blazing of the trail in ethics the epoch-making feats of reconstructive joint surgery, autoplasmic bone transplantation, etc., of Murphy, and the same principles as applied to spinal deformities and fractures and the various forms of bone inlay work as practised by Albee, might not as yet have been accomplished.

Murphy reasoned that if steel plates secured by screws of the same material were well born by the tissues, nails and screws could be utilized to advantage in securing fragments of bones, provided the non-glove-contacting with the wound technic was carried out. Autotransplantation of bone was then used instead of steel plates for



FIGURE 4—X-ray taken July 15, 1918, ten weeks after operation. Function of elbow joint is perfect.

fractures, coaptation being secured by placing the transplant in the medullary canal. Defects in long bones of several inches in extent also were successfully bridged by bone removed from the crest of the tibia of the same individual.

In Albees' method, doubtless familiar to all of you, transplants in the form of inlays secured by the aid of twin saws were taken from the surface of the tibia, or from the fragments themselves, bridging the break by merely sliding the longer of the two pieces removed, across the fracture and fixing it with screws or pegs.

Besides these methods a number of others have been advocated and practised with more or less success. Davison removes a section of entire fibula without periosteum in treating fractures of the tibia, femur, and for a dowel-pin in fractures of the neck of the femur. In due time intramedullary transplants are entirely absorbed and the canal is reestablished.

Murphy always preserved the periosteum with the transplant. According to Macewen, Moore,



FIGURE 5—Four and one-half months after accident. All fractures united firmly except upper femur. Note the rotation inward of lower fragment of femur.

Corbett, MacWilliams, Cohn, and Mann, all recent investigators, the periosteum is not an osteogenetic agent, neither do they believe it plays any essential part in callous formation.

Magnusen introduced bone and ivory plates to take the place of steel, screws of the same material being fashioned at the operating table by the aid of special thread cutting tools. More recently he has proposed an autoplasmic operation in which a transplant is cut from one end of the fragment, plunged into the medullary canal and secured with a bone screw.

Hoglund cuts the plug from one of the fractured fragments, beginning an inch or so from the line of fracture, caves it into the canal, then drives it on into the other fragment, afterwards

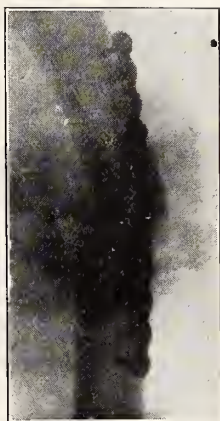


FIGURE 6—Upper fracture femur united with Lane plate. Note the abundance of callous.

securing it with a peg or bone screw. All of these procedures have been introduced with the view of obtaining an efficient method for treating fractures with absorbable material to take the place of metals which are non absorbable and objectionable in that they inhibit the normal osteogenetic processes by their presence.

Adherents of the autoplasmic graft methods maintain, on the other hand, that a bridge of bone used to secure fixation of the fragments actually stimulates osteogenesis. This is especially true in cases of non-union. I venture the opinion however, that when the supply of electro-operative bone sets equals the present supply of Lane plates and screw drivers the failures will increase accordingly. It requires infinitely greater skill to remove an inlay from the shaft of the tibia, caliper the same to the one-thousandth of an inch, accurately fit it into the bed prepared for it in the surgical neck of the humerus than it does to attach a plate of three or four holes to the same region.

In either case the most exacting technic is required to avoid infection.

Infection is almost certain to work havoc with a bone inlay, it becomes a foreign body in every sense of the term and behaves much the same as the sequestrum in osteomyelitis.

Dean Lewis has called attention to the importance of perfect hemostasis in autoplasmic bone work. He believes that clotted blood about the transplant prevents the serum from penetrating the bone and that vascularization cannot



FIGURE 7—Fracture radius united in malposition. Note how the lower fragment is displaced upward causing malalignment of articular surface of wrist joint.

take place, resulting in failure of the graft to take.

Transverse fractures of the tibia and forearm that have defied reduction by the usual non-operative methods employed, are easily adjusted by the open treatment. Frequently no further support is required to hold the fragments together than the application of a circular plaster of paris cast. An inlay operation however tempting in such a case, prolongs the operation and adds to the risk of infection.

Few oblique fractures are suitable for the Al-



FIGURE 8—Shows result of buckling of the fragments and bending of plate after repair and application of cast.

bee inlay. The intramedullary autoplasmic bone grafts of Murphy or Davison may be utilized. Their application, however, constitutes operations of much magnitude and involves unwar-

ranted risks to the patient. The Lane plate or the steel band of Parham and Martin are preferable to the graft in these cases. Indeed I am convinced that the steel plate is an invaluable asset to the surgeons armamentarium, and in the repair of both ancient and recent fractures, one often finds it indispensable. The operator who undertakes operative fracture surgery therefore should be provided with all the standard devices including plates.

To use the words of Sir Berkeley Moynihan, "there is nothing original in these few remarks. I have but gathered posies from other men's flowers. The only thing I have done is to bind them together."

Case Reports

Case 1. A boy, age 12, entered Iowa Lutheran Hospital, February 16, 1918, for fracture of the right femur at the middle third, having been struck by a heavy barn door. The radiograph, Fig. 1, showed the fracture to be oblique. Extension and splints failed to hold the fragments in apposition and the parents, being desirous of the best anatomical results, readily agreed to operation. February 25th, under ether anesthesia, the fracture was exposed through a free incision at the outer border of the rectus femoris. Two Parham and Martin bands were applied. The fascia lata was sutured with catgut and the skin closed with horsehair. Strips of gauze and cotton were laid over the wound and a circular plaster cast was applied extending from the foot to the groin. The cast was split throughout its extent immediately over the line of incision soon after it had set. So securely was the bone held together that little need was felt for any outside support.

The recovery was uneventful; the stitches were removed in twelve days through the gap after spreading the cast. At the end of three weeks, the cast being quite loose, a new one was applied.

This cast was worn until April 20th when it was dispensed with. The radiograph taken at this time, Fig. 2, shows the callus to be abundant.

Case 2. Boy, age 4, fracture of external condyle of the left humerus by fall upon the elbow.

Fig. 3 shows the relation of the detached condyle with the shaft. It was dislocated fully one centimeter from its normal position and turned completely upon itself the fractured surface looking outward.

The fragment could by no means be coapted or held in any position in which the arm could be placed. After waiting one week the fracture was exposed through a small incision and the fragments accurately reduced and two wire brads were inserted at different angles through it and into the shaft. The wound was closed with metal clips. The arm was dressed at a right angle and a plaster

cast applied down to but not including the wrist joint.

Upon recovery from the anesthetic, the patient was found to have normal use of the wrist joint and the plaster dressing was then extended to the finger. The wound healed by first intention and the clips were removed at the end of seven days.

Case 3. Male, age 42, entered Mercy Hospital March 13, 1918. He had been struck by a broken lever while operating a stump puller on November 5, 1917, and was thrown several feet, causing four distinct fractures of the right lower extremity. The X-rays taken upon entering the hospital, Fig. 5, shows a remarkable series of fractures, namely: A double fracture of the tibia and fibula; also a double fracture of the femur, the lower one having been compounded. At the time he came under my observation, four and one-half months after the accident, all of the fractures had united except the upper one of the femur. The limb was three and one-half inches shorter than the left and the foot rotated inward fully 45 degrees.

Operation for repair of the ununited fracture of the femur was undertaken March 19th under ether anesthesia. Incision over external border of rectus muscle exposed the fragments. An abundance of well organized spongy callus had formed about the fragments. Very free hemorrhage attended the removal of the callus and freeing of the fragments. The ends were squared with a small hand-saw. It was utterly impossible, however, to obtain normal alignment of the bones, due, I believe, to two conditions: First, the lower fracture of the femur, as may be observed in the radiograph, had healed in malposition with the middle fragment and deviated inward fully 15 degrees from the normal line. By rotating the limb outward after the fragments were freed makes the misfit apparent. Normal alignment would have been impossible without dividing the lower union and correcting the mal-alignment there which would not have been practical. Second, the adductor muscles of the thigh had been so much contracted that they refused to obey the efforts at abduction to the degree necessary to bring the extremity into superlative abduction. As it was, when the ends of the fragments were brought into apposition, the side strain on the contacting ends was terrific. To have used either an inlay or an intramedullary graft would have been foolhardy. Either one would have broken before the dressings could have been applied. An eight-inch plate was applied, bending it to conform to the curve of the bone.

The wound was closed by approximating the fascia lata with catgut and the skin also was coapted with the same material. A heavy plaster cast was applied from the costal cartilages to the foot with the limb flexed on the abdomen, and abducted as much as possible.

Fig. 6 represents the radiograph taken five weeks after operation. The plate is holding the bone

firmly in precisely the position in which it was placed at the time of operation.

Case 4. Male, age 42, struck on the arm by a cable which fractured the radius three inches above the wrist joint. He entered Mercy Hospital about five months after the accident. The patient stated that the hand and arm had been bandaged very firmly for several days immediately following the injury and that he suffered excruciating pain as a result.

The muscles of the hand and forearm were atrophied. The hand deviated to the radial side fully 30 degrees. The thumb and fingers were in extension or slightly flexed dorsally, and only the slightest movements were possible. The forearm was locked in supcrative pronation.

The X-ray shows the radius united in malposition, the lower fragment over-riding the upper one anteriorly, and being in contact with the ulna. The radio-carpal joint was displaced upward one-half inch.

Operation to correct the deformity and restore function was undertaken March 27, 1918; ether anesthesia. An incision was made over the external aspect of the radius and the groups of flexor and extension muscles carefully separated from each other.

The union of the fragments was ivory-like in density and was divided with some difficulty, a thin chisel being used for this part of the work. I should have used the circular saw in the separation, for although the chisel was directed well away from the bones proper, the cleavage ahead of the chisel suddenly sheared into the upper fragment and a large piece of the bone more than an inch in length came off from the inner surface as the separation was being completed. I had prepared to do an Albee inlay operation, but this accident compelled me to modify my plans. Each end of the bone was now squared up and an assistant directed to make traction upon the hand and to pull it ulnar-ward. His efforts failed to budge the overlapping fragments which were separated fully half an inch. A bone-skid was brought into service and the ends of the fragments were finally coapted in very good alignment. However, the least movement would cause the fragments to buckle and slip apart. I feared that an intramedullary peg from the tibia—which I had planned to do, after my first defeat—would not stand the strain which was bound to come at the point of coaptation upon completion of the operation. Therefore, a four-hole plate was used and the wound closed with metal clips. A circular plaster cast from the elbow down to the middle of the fingers, the hand being well inclined to the ulnar side, completed the operation.

The clips were removed at the end of fifteen days when the X-ray picture was made, Fig. 8, which shows the angulation forward and the bending of the plate due to buckling after cast was applied. This, however, interferes in no degree with the movements of the arm or hand, which under massage

treatment, has in six weeks' time since the operation, almost fully recovered. The wrist joint, as shown by the plate, is practically normal in its anatomical relations.

All of the work was carried on without glove contact with the wound. The instruments being handled by no one except the operator and contacting with nothing but the operative field. Towels attached to the edges of the incision protected the field of operation.

These cases recently under my care are reported in order to show the value of metal splints in certain operative fracture work.

MEDICAL vs. SURGICAL TREATMENT OF PEPTIC ULCER*

S. G. HANDS, M.D., Davenport

When the fact is taken into consideration, that Peptic Ulcer is found in from 5 to 10 per cent of persons dying from all causes, it must be conceded that personal experience can be of but limited value in the discussion of so common a pathological condition as that under consideration, for no individual has had sufficient dealings with this lesion upon which may be based any definite conclusions.

The literature abounds with articles dealing directly with the subject matter, but in the calm perusal of such writings, one becomes suspicious that authors are not strictly impartial, and attempt to swing the argument in the direction taken by their individual fancies. Keeping this thought constantly in mind, it has been the plan of the essayist to compare in an unbiased manner the relative values of the medical and surgical treatment of all peptic ulcers, whether acute or chronic.

It is reasonable to believe that if ulcer be present a great many times without there being present any symptoms of such, one may feel safe in assuming that positive signs of ulcer may not indicate the degree of pathological change. Cabot reports that diagnoses of peptic ulcer was substantiated by post-mortem evidence in but 36 per cent of such cases in a series of 3000 autopsies on patients dying from various causes. This would seem to indicate that a diagnosis that would differentiate ulcer from other abdominal disorders, was possible in only about one-third the cases in the hands of men of the ability conceded to the staff of the Massachusetts General Hospital.

*Read at the February meeting of the Scott County Medical Society.

Many cases of digestive disorder are found in which diagnosis of ulcer has seemed to be logically correct, when the train of symptoms present was really but the result of reflex irritability of the gastric structures, the immediate cause being an involment of peritoneal tissues within the pathological field of a appendiceal or gall-bladder disturbance. Liberation of omental adhesions and the removal of a diseased appendix or gall-stones has repeatedly caused the disappearance of symptoms supposed to be pathognomonic of gastric ulcer.

It was most difficult to estimate just how often a dilated stomach, incident to a stenosed pylorus, is responsible for death by intercurrent disease, by its interference with proper digestion, and hence with proper nutrition. But that such an extremely undesirable complication is very frequently a factor, must be admitted.

Hence the possibilities for evil are both remote and immediate. The immediate danger is perforation. Hemorrhage is frequent, but is less dangerous to life. Carcinomatous degeneration is the spectre which looms up in the not very distant background.

In statistics compiled by Mallory, in a total of 1465 cases, pyloric stenosis developed in 10 per cent and cancer in 3 per cent of the total. The general mortality was almost 20 per cent. He then goes on to state that the result of medical treatment of gastric ulcer is decidedly unsatisfactory even when carried out by the best gastro-enterologists in the medical profession. If internists, possessing the vast experience and ability conceded to such men as Musser, Regal, Lebert, Welch, Leube, Devore and Reynolds get such deplorable results in treating peptic ulcer, what must be the end-results of the medical treatment of the average men of the profession?

The Mayos report that more than half of a number of specimens of gastric cancer examined at the clinic, had their origin in chronic gastric ulcer. Wilson of the same institution, puts the number at 70 per cent. Rodman has stated that there is abundant proof that gastric cancer usually, and perhaps always develops on the site of chronic ulcer, and, furthermore, advises operation in this precancerous stage, as he considers chronic gastric ulcer as potential cancer.

When one considers the possibility of a wrong diagnosis and that the degree of disturbance may not be measured by the severity of the symptoms, one can readily understand that a much higher percentage of frank gastric cancer might easily be preceded by ulcer, without a distinct

history of such a pathological picture being manifest. Smithies record that in a series of 566 cases of cancer of the stomach, 60 per cent gave a history of premonitory symptoms which are associated with those of gastric ulcer.

Gastric cancer has been found in the course of exploratory manipulations, where there has been no complaint of gastric disorder. Many times operation has revealed malignancy when the symptomatology has been that of gastric ulcer. Periodicity of dyspeptic symptoms was noted in 81 per cent of all cases supposed to be suffering from ulcer and which was later proven to be cancer. But the symptoms were constant when a diagnosis of malignancy was apparent.

Andresen asserts that 10 per cent of all peptic ulcers of the stomach develop into cancer, while Payr gave 26 per cent as his observation. Although the argument might be advanced that in these cases, cancer was really the primary condition and that the symptoms present were those of cancer and not of ulcer, still some consideration must be given such statistics as in the former event, the condition is surgical anyway.

Probably the most valuable evidence yet presented, which deals with the relationship existing between gastric ulcer and gastric cancer, is that presented recently by McCarthy and Brothers of the Mayo clinic. A series of 684 specimens were examined microscopically; 191 were simple ulcers; 472 were positive cancerous; 21 were doubtful. In this connection, it was interesting to note that the earliest evidences of carcinomatous degeneration were in the mucosa of the ulcer border, and not in the base, signifying that malignant degeneration did not occur first in epithelium cut off and isolated in scar tissue.

The mortality of peptic ulcer is given at 8 or 10 per cent. The study of 500 cases at the London Hospital, show that fifty per cent were uncured by medical means; and of those that were discharged as cured, one-half relapsed. Another writer states that the diminution of vital forces incident to ulcer is the cause of premature death of over 50 per cent of ulcer patients. Still another writer claims that acute ulcer constitutes about 20 per cent of the total and of these 90 per cent are cured by medical means. Of those uncured, 12 per cent were relieved of all symptoms when the appendix was removed. But by far, the preponderance of evidence is in opposition to such favorable reports. It is observed that those of the greatest experience are the most conservative in their estimates of the end-results of medical treatment.

When the internist comes to look into the sit-

uation, it would seem that medical treatment is justifiable only in the mild forms of very recent ulcer. Leube advises that when four or five weeks of proper medical treatment does not cause a decided improvement of symptoms that surgical interference is justifiable. Relapse are frequent and there may be a recurrence after several years. This same author remarks that owing to the ambiguity of statistics, the uncertainty of an exact diagnosis, with conditions and symptoms varying within the widest limits, it is impossible to place ulcer treatment under a definite category. It would seem that surgical exploration would be the only course to follow, so that treatment of a doubtful case may be put once for all upon a definite basis.

Scudder admits that most cases of chronic gastric and duodenal ulcers are best treated by surgical measures. He also advises operation in every case of relapsed gastric ulcer where proper medical treatment has been carried out with the patient in bed. In these days of aseptic surgery, if mistakes are to be made, let such errors be of the mind and not of the heart, as less serious consequences will result from over-enthusiasm of the surgeon, than from procrastination on the part of the internists.

Musser has said that old broad and deep ulcers never heal and that a real cure may be accomplished only when excision or resection is possible. Excision of the ulcer is the only course of treatment which practically ensures freedom from the complications of ulcer, which are hemorrhage, perforation, sub-phrenic abscess, hour-glass stomach, and in the light of what has been said above, carcinomatous degeneration of the ulcer site. When excision of the ulcer is inadvisable, by reason of its location, gastro-enterostomy alone is indicated.

The surgical treatment is not to be undertaken lightly by the average surgeon. Excision of the ulcer-bearing area is apt to assume formidable proportions in a number of instances and a large amount of surgical skill and judgment is necessary in order that mortality statistics may not become forbidding. Involvement of the gall-bladder and pancreas is generally the rule, better results have been noted when drainage of the gall-bladder has accompanied the gastric manipulations.

The Mayo clinic reports an operative mortality in the surgical treatment of peptic ulcer as 2.4 per cent in 1000 cases. The average mortality of such operations as Moynihan, Mayo-Robson and the Mayos, is 3.3 per cent. The

mortality of ulcer treatment medically is 8 per cent. Cure or great improvement followed gastro-enterostomy and excision or infolding of ulcer, in 98 per cent of all cases of ulcer of the duodenum or all cases of ulcer of the pyloric end of the stomach. It is to be expected that the mortality of hospital cases, referred for operation, is unnecessarily high on account of the dilatory tactics of the internist, who does not seek his surgical colleague until the patient's resistance is lowered by starvation and loss of blood.

To forestall the argument that the above figures are those of master-surgeons and therefore much lower than those of the average surgeon, attention is directed to the fact that the above statistics upon the exclusive medical treatment are from the records of master-internists, and that there is just as much likelihood of the statistics of the average men of the profession suffering by comparison in the latter instance as in the former.

In conclusion, the various reasons for advocating surgical interference in all cases of peptic ulcer are as follows: 1. Liability to error in the differential diagnosis between peptic ulcer and frank surgical conditions, such as perigastritis, diseases or biliary passages, hour-glass contractions, pyloric stenosis, appendicitis and gastric cancer.

2. Liability to hemorrhage and perforation, as 6.7 per cent of all ulcers perforate and at least 50 per cent of all cases are subject to hemorrhage of more or less extent.

3. Liability to recurrence, almost 75 per cent.

4. Liability to malignant degeneration of ulcer, variously estimated at 3 per cent, 10 per cent, 26 per cent.

5. Liability to deformities of stomach following healing of ulcer.

6. The mortality of peptic ulcer is 8 per cent while the operative mortality is 3.3 per cent.

7. Gastro-enterostomy is practically 98 per cent efficient, while the strictly medical treatment is almost 50 per cent deficient.

In the course of a recent collaboration upon the relationship between gastric ulcer and gastric cancer, pathologists of the Mayo clinic come to this conclusion: "The association of these two conditions, in conjunction with the fact that the immediate operative mortality, the post-operative mortality and the subsequent duration of life after gastric resection, bear a definite relation to the extent of carcinomatous involvement, should be sufficient to stimulate a con-

sideration on the part of every physician, of the possibility of chronic gastric ulcer not only becoming, but actually being, carcinomatous."—"In spite of the best diagnostic procedures of the times, exploration and microscopical examinations offer the only positive means of differentiation between simple and malignant ulcer." Then from another report from the Mayo pathologists: "It seems probable from a careful study of the clinical and pathologic evidence of this series of cases that gastric cancer rarely develops except at the site of a previous ulcerative lesion of the mucosa."

BIBLIOGRAPHY

1. W. J. Mayo—Ulcer of Stomach and Duodenum. Collected papers of Mayo Clinic, 1911.
2. W. J. Mayo—Cancer of Stomach. Its Surgical Cure. Collected papers of Mayo Clinic, 1911.
3. L. B. Wilson—Causation of Cancer. Collected papers of Mayo Clinic, 1911.
4. R. C. Kemp—Diseases of the Stomach, Intestines and Pancreas.
5. Musser and Kelly—Practical Treatment.
6. W. L. Rodman—Talks on Cancer. Murphy Clinics, 1913.
7. G. R. Lockwood—Prognosis and End-results of Treatment of Gastric Ulcer. Journal of A. M. A., Vol. LVI, No. 13.
8. F. Smithies—Significance of Gastric Ulcer with Respect to Gastric Cancer. Journal A. M. A., Vol. LXI, No. 20.
9. Parker Syme—Some Surgical Aspects of Gastric Ulcer. N. Y. Med. Journal, July 16, 1910.
10. Reed—Diseases of Stomach and Intestines.
11. J. N. Hall—Why Prolonged Medical Treatment of Peptic Is Unadvisable. Journal A. M. A., Vol. LXII, No. 13.
12. W. D. Haines—Some phases in the Surgical Treatment of Gastric Ulcer. Surgery, Gynecology and Obstetrics, Vol. XV, No. 1.
13. C. L. Scudder—Certain Observation in 200 Cases of Gastric Disease. Boston Medical and Surgical Journal, Vol. CLXI, No. 18.
14. A. F. Andresen—Results of Operation for Gastric Ulcer. N. Y. Medical Record, Vol. LXXXIII, No. 18.
15. W. J. Mallory—Treatment of Gastric Ulcer. Journal A. M. A., Vol. LVII, No. 14.
16. C. F. Martin—Organic Disorders of the Stomach. Osler's Modern Medicine.
17. W. C. McCarty—A. C. Broders—Chronic Gastric Ulcer and its Relation to Gastric Cancer. Archives of Internal Medicine, Vol. XIII, No. 2.
18. R. C. Cabot—Diagnostic Pitfalls, etc. Journal A. M. A., Vol. LIX, No. 26.
19. L. B. Wilson—McDowell, I. E.—Further Report of the Pathologic Evidence of the Relationship of Gastric Ulcer and Gastric Carcinoma. Am. Jour. of Med. Sciences, Vol. CXI, VIII, No. 6.

Editor Jour. Iowa State Medical Society,
Clinton, Iowa.

My Dear Doctor: I beg enclosing copy of resolutions recently passed by the Scott County Medical Society* together with the paper "The Medical Supervision of Registrants" inspiring them in the hope that you may find them suitable for the State Journal.

Since then a number of other local societies in Iowa, Illinois and Ohio, also the Medical Faculty of the Iowa State University and the State Council of National Defense have endorsed the project.

Yours very truly,

PAUL KERSCH, M.D.,
(Not practicing)

*Resolutions published in April Number of this Journal.

VENEREAL DISEASE AND DISASTER AT ARMS

An Appeal to the Medical Profession

"The third week of the draft army showed an astonishing increase in the number of cases of venereal diseases. Whether this means that these diseases are much more common among young men of military age in the civil population than we ever supposed I do not know. Certain is it, however, that we have almost 400 per 1,000, whereas our highest rate in the last twenty years in the army has been 162."

COL. RUSSELL, U. S. A.,
Chief, Laboratory Division.
(A. M. A. Journal, Nov. 18, 1917)

As a peace problem, communicable disease, especially venereal disease, was serious enough; as a war problem, it is menacing.

Venereal disease, constituting as it does, the greatest single factor of inefficiency, disablement, untoward expense and incumbrance in the army, endangers final victory.

Unfortunately the possibly decisive importance of protecting the potential army material of the nation against this class of disease is not fully apprehended by the medical profession, much less by the laity.

As all soldiers are taken from civil life, and as venereal disease could not exist within if not existing without the army, it is plain that the averting of a possible defeat of our arms from that source must largely depend on the will and attitude of the home physician.

Fortunately the greatly expanded Federal powers and support under present war footing offer the saving opportunity of placing the most essential groups of the population under medical protection within military authority, (and through them coincidentally much of the remaining population) assuring the uniformity of effort under central direction so long desired and so essential to success. Obviously, however, this happy solution of a very grave problem, cannot materialize without the services of thousands of physicians from civil life.

Indeed with them rests chiefly the making most of the present opportunity of finally relieving the nation of one of its heaviest burdens and most vicious taints and of thus giving even to this darkest of clouds a silver lining.

Under the untiring initiative of the medical department of the army ably assisted by the

American Medical Association and a large array of many other organizations and individuals, a very comprehensive program has been mapped out and extensive ground work laid for the purpose of protecting the nation during the war against the aggravated menace of communicable disease. Unfortunately so far the results obtained are disappointingly out of proportion to the splendid zest, earnest thought and the vast labor and preparations expended.

Nor is there much of imminent and practical value to be attained, until, to begin with at least, the problem is being considered and dealt with in the light of an immediate war emergency, excluding as much as possible all conflicting authority and subjecting it to military subordination, regulation and control.

True, dealt with as such and in that manner the safeguarding of the essentially and potentially military groups of the population would be made the primary object and the protection of the general public become merely a means to that end. As in contradistinction to the opposite course, however, (and the one mainly followed heretofore) much enabling authority already exists and such additional as might be required could be easily obtained from Congress and without much loss of time and as moreover the work of systematic protection of some of these groups at least could begin almost at once, the public in general would be assured of a measure of protection and of that measure more certain and in much shorter time were the opposite course followed and adhered to.

The preferential value of this course becomes incontestably established when comparison is made between the almost chronic failures and impotency of municipal, state and elymoseenary efforts dealing with the problem of safeguarding the public against communicable diseases in the past and since the beginning of the war, and the prompt and signal success of military efforts in Cuba, Panama, Vera Cruz and in the army.

Already too much time has been wasted in the attempt to act on the whole of the population through the long, laboring and intricate harmonization and collaboration of conflicting Federal, municipal and state laws and efforts and individual and group idiosyncrasies and not enough attention devoted to acting through the comparatively much simpler and from the point of military expediency much more urgent course of safeguarding that part of the population from which sooner or later all of our armies must be drawn. In extending protection to that portion

of the population, we would not only coincidentally take the biggest single step forward in protecting the whole of the people, but would also be meeting the most obvious requirements of military foresight and of plain duty and common decency by those who are to give their labor, life and limbs and by their families.

For such a purpose there should be no doubt of an army of 50,000 medical men, unavailable for service away from home, but nevertheless eager to do their part in this great national emergency, reporting for duty over night, once assured of that unity of direction and protection under central authority which military jurisdiction alone can supply.

Dormant, diffused and impotent sleeps idly today the mighty giant of medical energy while his blest powers of saving are needed as they were never before. In the will of the medical men of the nations rests the power of galvanizing him into life, set free his unbounded benefactions and snatch from one of the menacing storm clouds of war the threatening torrents of desolation and disaster.

Should not the local medical societies, above all, express that will and take the initiative. As official mouthpieces of the busy practitioners of the country with them rests primarily the responsibility and power for action. The national society has done valient service considering the apathy of its units. The general is powerless in the face of lukewarm battalions. What has your Society done? Is it going to prove a nation's friend in need, yea, the most needed friend of its own nation in her most urgent need?

Then in the name of our suffering nation, let the wires be strung this day lest the saving current come too late.

Col. Russell's report preceding this appeal should prove sufficient in itself to bring home to every medical mind the consciousness of a real danger and with it the urgent necessity of some authoritative organization that would incorporate the services, if need be, of every qualified physician wherever located, and, direct, deliver and dedicate them swiftly to the task of averting disaster. Obviously, however, the Medical Department of the army could not recommend to the Secretary of War the organization of a new branch of the medical service, such as the situation calls for, unless assured beforehand of sufficient personnel, that is, of one or more physicians and dentists to each of the 4,500 selective boards in the country.

Arguments and Plans of Organization and Operation

A. MILITARY

1. If the war is to be fought to a finish (an obligatory strategic presumption in all events) man power may likely become the deciding factor.

2. Venereal disease being the most prolific single destructive factor in man economy, is also the most promising single source of saving and a final decision might hinge on our ability of protecting against the evil all of our man resources; those under arms, under draft and those potential.

3. Such protection assuming so great a strategic significance, and having proved so signally effective under military jurisdiction as shown by the current army record of a rate of less than 137 per 1,000 as against a little less than 400 of the new draft army, which must be reckoned as the presumptive rate prevailing among the civilian population of fighting age, their protection should not be left to the uncertainties of disjointed civil efforts, but should speedily pass to military control and jurisdiction.

4. Under present laws it may not be possible to so place, even medically, all of the men of fighting age. These, at least, between the ages of twenty-one to thirty can and should be so placed, though lack of quarters, equipment, etc., should preclude their all being called into active service at once. It being but reasonable to presume, if they were subjected to similar practices observed in the army camps, the venereal disease rate among them would eventually meet the relatively low level of the army, thus escaping the heavy load and expense of caring, sooner or later, for nearly two million venereal invalids (and obliging the enemy with this casualty list without one dot of military gain) and gaining that additional number of soldiers available for active service, presuming the uncalled registrants to number 7,500,000.

5. Similar advantages could be gained by anticipating the ultimate necessity of drafting into service men between the ages of nineteen and twenty-one and thirty and forty (they to be called only when the other ages are exhausted) by having the present draft law so amended and by placing them under military rule and jurisdiction as suggested for the present uncalled registrants.

B. CIVIL

The greatly enlarged powers and support of the Federal authority under the pressure of war offer a long despaired of opportunity of bringing the whole country at last under some uni-

form and effective system of checkmating the growing inroads of the venereal disease evil and the opportunity should be made the most of while it lasts. This can be done by placing under military venereal control in addition to the army and navy the following groups of the population:

UNDER PRESENT LAWS

1. Present and future registrants (embracing as they do the ages of greatest sexual activity and indiscretion).

2. Enemy aliens.

3. Soldiers on prolonged leave of absence from camp or from the front. (The European War experiences having shown them to constitute a most prolific source of venereal contagion.)

4. Soldiers due to be dismissed or mustered out while and as long as venereally contagious.

UNDER PROPOSED LAWS

1. Men between the ages of nineteen and twenty-one and thirty to forty.

2. Aliens and immigrants of neutral and allied nationals.

3. Females having been identified as sources of infection by any male under military venereal jurisdiction, including soldiers.

4. Manual employes of the Federal government in arsenals, navy yards, etc.

The organization suggested to carry out the purposes as outlined to consist of:

1. A central bureau, as a part of the medical service of the War Department under the jurisdiction of the Surgeon General to be known as the Bureau of the Registrants' Medical Corps (R. M. C.) in charge of an executive officer to be known as the Chief of the Registrant's Medical Corps and his assistants to take charge of the organization, direction and be responsible for the officers, and duties assigned by the Bureau.

2. A new branch of the medical service of the army to be known as the Registrants' Medical Corps under the immediate jurisdiction of said Bureau and chief to be named by volunteer physicians and dentists, one or more to be assigned to every registration precinct to be placed in charge of and held responsible for the medical supervision of every registrant within their respective precincts, they to be commissioned as army officers without pay or pension, but entitled to wear uniforms. Preference in assignments to be given to those who had previously volunteered their services as medical officers in the army but found physically unfit, and to those, though sound and capable, too old to serve in the field, and preference and priority in rank to physicians and dentists already serving as exemp-

tion officers, who shall be preferentially eligible to the regular service with full credit for the time of their voluntary services.

MODUS OPERANDI

All present and future registrants to be ordered before their respective exemption boards and as many examined at a time as consistent with careful work. Their physical examination to be conducted by the officers of the R. M. C. in charge of the respective precincts. Registrants hopelessly unfit and otherwise disqualified to be at once exempted.

All those found venereally (and otherwise) contagious, whether otherwise fit or not, together with all others, to pass at once under military jurisdiction, the former placed under treatment and sexual restraint until past contagion, all others compelled to submit to semi-monthly examinations before the respective officers of the R. M. C. until called into training or finally exempted. Registrants to bear the expense of necessary treatment unless prepared to execute affidavits as to their inability to do so.

The Bureau of the R. M. C. to furnish to every accepted registrant through the local officers in charge a manual bearing his number containing rules, regulations and instructions as to venereal hygiene, moral and medical prophylaxis, means of protection and penalties for infractions, and such other general information and instructions as might prepare him properly for his future work and responsibilities.

All held and accepted registrants to be equipped with some easily discernible insignia defining their status and compelled to plainly display them in public at all times. These insignia, in lieu of regular uniforms, to legally constitute uniforms subjecting the bearer to the same protection, regulations and penalties as though in uniform.

Enemy aliens (if possible aliens and immigrants of all other nationals and Federal employes) also to be compelled to undergo systematic medical inspection before the respective officers of the R. M. C., likewise all soldiers on furlough or leave of absence from camp or the front whenever absent more than two days and wherever located at such times and should, under heavy penalties provided for failure to do so, present evidence of such examinations upon reporting for duty; same procedure being recommended for our soldiers serving abroad.

Such soldiers, as well as all aliens and registrants and Federal employes found venereally infected, to be compelled under suitable penalties, provided, to disclose to the medical officer de-

tecting such infection the guilty source of infection (the same regulation being recommended for encamped soldiers found venereally infected) and the sufferer to be placed at once under sexual restraint and proper treatment. Any sources of infection so disclosed and located, clinical or laboratory symptoms having confirmed suspicions, to be apprehended, isolated and placed under proper treatment.

It shall be part of the duties of the Bureau of the R. M. C. to enlist the cooperation of the several civil governments in the work of safeguarding registrants, soldiers and aliens against venereal infection and to that end the Bureau should prepare carefully drawn suitable and standardized laws and ordinances and solicit their uniform adoption. The Bureau should also assume the work of standardizing and directing the activities of all the existing cooperative civil organizations and encourage the organization of others, and to enlist the co-operation of local medical societies, private and public hospitals and kindred institutions in order to secure wherever possible the free or cheapened dispensary, clinical and laboratory facilities necessary for the proper diagnosis and treatment of venereal disease among soldiers, registrants, Federal employes, aliens, indigent civilians and their disclosed sources of infection.

Finally as an automatic consequence of the inauguration of the above program, certain very desirable benefits would follow, herewith briefly stated:

1. The practical elimination of the so-called "Specialists" who derive their revenue mainly from the patronage of young men.

2. The elimination of treatment through "wise" friends and druggists on the part of men of military age.

3. Persistent, uniform and continued treatment until cured of past contagion whereas now but 12 per cent. of sufferers consulting regular physicians continue that long.

4. A military medical organization in every city to take care of in their home town, invalided soldiers returned from the front; nothing having been done so far to anticipate this sad but certain emergency.

This Journal declines advertising that, if accepted, would lower its standards. This justifies readers in giving the accepted advertisers their confidence and patronage.

We place the quality of our advertising pages above advertising revenue. But it pays our readers because they know our columns are trustworthy.



LAWRENCE WILLIAM LITTIG, M.D.
Iowa City
July 20, 1858—July 17, 1918

The Journal of the
Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa

Publication Committee

D. S. FAIRCHILD.....Clinton, Iowa

W. L. BIERRING.....Des Moines, Iowa

C. P. HOWARD.....Iowa City, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa

T. E. POWERS.....Clarinda, Iowa

W. B. SMALL.....Waterloo, Iowa

SUBSCRIPTION \$2.00 PER YEAR

Books for review and society notes, to Dr. D. S. Fairchild, Clinton. All applications and contracts for advertising to Dr. T. B. Throckmorton, Des Moines.

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII August 15, 1918 No. 8

LAWRENCE WILLIAM LITTIG, A.M., M.D.,
M.R.C.S., F.A.C.S.

Death often falls where least expected. Dr. L. W. Littig had for many years been regarded as one of the foremost surgeons in Iowa, and his influence in medical circles, was probably greater than any other Iowa medical practitioner. His physical vigor and endurance; his great energy in medical organization, had placed him where we had ceased to think of him in terms of death and when the announcement came that Dr. Littig was dead, it produced a profound shock. Dr. Littig had all his professional life stood for high ideals, and if any measure came before the profession for its betterment, even if the measure was at first unpopular he was one of the first to be enlisted. It was during his active professional life that the cause of medical education reached its greatest activity, and he unhesitatingly, cast his energy, strength and influence without reservation, unpopular as it was in many places, into the issue. It was fortunate that he was spared to witness the final success of a great work that has placed American Medical Colleges in the highest ranks. His activities in medical society organizations was unequaled. Dr. Littig was uncompromising in his warfare against fraud and pretense in his own ranks, and he abhorred quackery in all its forms. His sense of honor was of the highest, and he never allowed his name to be used in any questionable manner. The writer had the

good fortune to be intimately associated with Dr. Littig, in many activities.

Many years ago when serving as chairman of the Section of Medicine of the State Medical Society we invited Dr. Middleton of Davenport, to prepare a paper for the section, but was referred to a young physician who had but recently located in Davenport, filled with the most recent medical knowledge from the universities of Europe—Dr. Littig was the man—and strange as it may seem, the paper was on “Infections,” from which the gifted man at last himself fell a victim.

Dr. Littig was a man of wide general information. A master of English and possessed of a reading and speaking knowledge of French, German and Italian languages.

Ten years ago he suffered from a serious infection while treating an accident case which lead to an attack of myositis which threatened a permanent crippling of his limbs. At this time he spent a winter in Rome, and while there formed a close friendship with Professor Bastianelli, the famous Italian surgeon—who is now serving as Chief Surgeon of the Italian Army. It was during the winter in Rome that Dr. Littig took up seriously, the study of Italian literature and since then he always carried in his pocket a small volume of Italian romance, to which he devoted hours on trains and at stations. He saw much beauty in the old Italian romances of love and intrigue. There were many phases of Dr. Littig’s character which were but little understood, even by his closest friends. Many were only able to see his rugged exterior, little dreaming of the warm heart dwelling within. He almost feared that expressions of sympathy were evidences of weakness and when torn with anxiety over the welfare of his desperately sick patient, and devoting every ounce of energy to the cure, he was often thought indifferent. Dr. Littig was in no sense of the word a “good mixer.” He recognized this fact, painfully, and realized the handicap, but he knew that nature had denied him this important faculty to success, and that artificial attempts at sweetness would quickly betray him, therefore he trusted to honesty and loyalty of purpose for whatever he could accomplish.

Dr. L. W. Littig was a native son of Iowa, having been born in Davenport July 20, 1858, his father John Littig was a native of France and a farmer by occupation.

He acquired his early education in the public schools of Davenport where his parents lived for the greater part of their lives. He was graduated from St. Vincent’s college of Cape Girardeau, Missouri, in 1880 with the degree of

bachelor of arts, and two years later received the degree of master of arts.

He entered the medical college of the Iowa University in 1880 graduating therefrom in 1883. In the fall of the same year he entered the medical department of the University of Pennsylvania graduating from that institution in May, 1884.

After a competitive examination he next became resident physician of the Philadelphia Blockley hospital, an institution of 1000 beds. At the expiration of his term as resident physician Dr. Littig returned to Davenport where he was at once elected county physician. Resigning this position at the end of nine months he went to Europe, where he spent some two and one-half years in the hospitals of Vienna and Berlin. During this time he made several trips to London, passed the necessary examinations, and in October, 1887, received the qualification, "Member of Royal College of Surgeons" (M. R. C. S.), which entitles him to practice in Great Britain.

Subsequently Dr. Littig made three visits to Europe, spending the entire time in the Royal hospital of Vienna, an institution of 4000 beds.

Dr. Littig was made professor of anatomy in the University of Iowa in 1889 and was subsequently promoted to the chair of theory and practice of medicine and clinical medicine. He was secretary of the county medical associations at this time and an honored member of the American Medical Association.

Dr. Littig was a member of the Royal College of Surgeons of England; Consulting Surgeon of the C. R. I. & P. Railway, Attending Surgeon for Mercy and St. Lukes Hospitals, Davenport, member American Medical Association; Iowa State Medical Association, of which latter he was president in 1912; Scott County and Iowa University Medical Associations; American Association of Railway Surgeons; Western Surgeons Association of which he was president in 1916; Mississippi Valley Medical Association; Iowa and Illinois District Medical Association; Chicago Medical Society, and Davenport Pathological Club.

DR. LAWRENCE W. LITTIG

An Appreciation of his Contribution to Medicine in Iowa

As a medical student, an associate in teaching, and with frequent opportunity of professional contact, it has been my privilege to enjoy the friendship of Doctor Littig during all of my medical life, so the impressions expressed herewith will no doubt be largely personal, yet I hope

to convey in a measure at least, a comprehensive estimate of his services to medicine in Iowa.

A graduate of the medical department of the State University of Iowa in 1883, the University of Pennsylvania in 1884, a member of the Royal College of Surgeons of England in 1887, followed by three years of special study in European medical centers, he returned to his alma mater in 1889 as professor of anatomy. He was the first medical teacher to come to Iowa after a rather long course of post graduate study in the best laboratories and hospitals of the old world, and brought the flavor of recent personal contact with such leaders of medical thought as Pasteur, Lister, Gowers, Charcot, Virchow, Koch, Rokitsansky and Billroth, so that his coming marked a new era in the medical life of the university. In the mind of the receptive Iowa student he instilled that spirit of scientific inquiry, and careful methods of investigation, so characteristic of the medical worker across the sea. Furthermore, he stimulated the desire on the part of student and graduate for the broadening influence of medical travel, a wider range of reading, and a more comprehensive view of the study of medicine. A large number of the later teachers in the University Medical School came under this stimulating influence to the subsequent benefit of the institution they were to serve.

In keeping with the quality so characteristic of Doctor Littig, of being well prepared for each new duty, he brought not alone the necessary training for the teaching of anatomy, but an unusually large collection of specimens, specially prepared for demonstration purposes. His preparations of joints, cross sections of the head, properly hardened brains, Weigert stained microscopic sections of the brain and spinal cord were distinctly new and added greatly to the interest in the study of the subject.

After the death of Dr. W. F. Peck in 1891, Dr. W. D. Middleton was elected professor of surgery, and Dr. Littig was appointed to the chair of medicine, in which post he continued to 1903, when he resigned to take up a consultation practice in surgery.

In the teaching of internal medicine he introduced the methods peculiar to the European Medical School, which emphasized the important role of diagnosis in clinical medicine. While this implied a certain degree of therapeutic nihilism, we have come to recognize that an understanding of the nature and diagnosis of disease conditions is fundamentally essential in instituting the proper plan of treatment.

It is interesting to recall that he brought the first oil immersion lens into Iowa, the first to

use the centrifuge and the stomach tube, and to introduce chemical and microscopic examinations of secretions, excretions, and exudates for clinical diagnostic purpose. My first opportunity to see sputum stained for tubercle bacilli, and human blood for malarial parasites was in a demonstration by Dr. Littig.

He was entirely responsible for the establishment of separate departments of pathology and physiological chemistry at a time, when only a limited number of the leading medical schools in the country had taken this step. Even during the time that his interests were largely concerned with the teaching of clinical medicine, he devoted a summer's vacation of five months, in order to take the special course in bacteriology given at the Pasteur Institute in Paris by Doctors Roux and Metchnikoff, so as to induce me to follow his example a year later, and then with his help to establish a systematic and practical course in bacteriology at the University.

As a product of the medical training of the old world, it was interesting to note his impressions and the way he reacted to the environment in which his education was largely acquired.

He admired the painstaking systematic methods of the German and Austrian investigator, but his work and thought was more expressive of the critical analytic spirit of a Pasteur and a Roux. He entertained a high regard for the clinical teaching of Nothnagel, Strumpell and Kraft-Ebbing, but appeared a more consistent follower of clinicians like Charcot and Gowers. He referred more frequently to the writings and teachings of Trousseau than any other author of clinical medicine. He greatly admired William Stokes, and often cited his valuable contributions to our knowledge of heart diseases, as an example of what could be accomplished in a small hospital or limited medical service.

The distinctive feature of Doctor Littig's teaching, was the development of the demonstrative method, both in the laboratory as well as the clinical branches. He encouraged and stimulated practical laboratory training, and the bedside teaching which has now become the universally adopted plan in all recognized medical schools.

Even after he gave up active medical instruction, the natural teaching instinct was ever a feature of his many activities. Every medical paper and address always so carefully prepared, taught a lesson. His address as President of the State Society at the Burlington meeting in 1912 was published in full in the *Journal of the American Medical Association* by special request of the editor, because of its advanced thought on medical education, hospital standards and medi-

cal practice.

We are all familiar with his remarkable success in promoting high class programs for medical society meetings. In this respect the meetings in Davenport, while he was the Secretary of the Society, and more recently in Iowa City, bear testimony. He regarded the medical society as an avenue for graduate study, and kept this feature constantly in mind in the arrangement of the program.

He was an enthusiastic worker in the campaign for hospital standardization, for he regarded the hospital and the staff as the index of the professional standing of the medical men of the community, and held that the real function of the hospital was its teaching influence, and the elevation of medical standards of practice.

No appreciation of Doctor Littig would be complete without a reference to his general learning. He had been most fortunate in his early training in Latin and English. I can recall two professors of English who referred to him as an authority on the use of the comma. His knowledge of the German language seemed equally as perfect. Being of French (Alsatian) parentage, his love for the French people and their language with the privilege of hearing it spoken in his childhood, was in his favor, for he spoke it like a native. Numerous letters received from him during my graduate student days in Paris were without an error. In his busy life he still had time to teach his children the French language. When fifty years of age, he passed through a staphylococcus infection, the like of which is rarely encountered in any experience and result in recovery, an illness of one year, with a diffuse myositis resulting in a most distressing general muscular atrophy. During his convalescence it was thought advisable that he spend the winter months in Rome, Italy. There he took up the study of the Italian language and mastered it so that he later carried on an interesting correspondence with Dr. Bastianelli, the surgeon, and read with ease the daily Italian newspaper published in New York City.

His library contained a collection of rare medical works, and was further replete with the best literature of the three European languages with which he was familiar.

It is interesting to note that he had a few hobbies, being an enthusiastic gardener, a lover of flowers, and at one time a successful breeder of Boston terrier dogs.

In the intimate circle of a few friends he could prepare most delicious hot biscuits, and with his little French coffee pot, was able to brew a cup that was as Nectar fit for the Gods.

His was a unique and strong personality, of kindest instincts, staunch in friendships, and admirable in the devotion to high ethical standards. A nobility of character and greatness of intellect, that we hardly grasped until it had passed from the stage.

While I was writing the above, Dr. Frank A. Ely of Des Moines, a former student of Doctor Littig, asked the privilege of adding a few words of tribute, and in the following terse sentences he has given the best possible measure of the man. "As one of the early internes of the University Hospital, I came to know Dr. L. W. Littig, very well, better perhaps than most of the students who passed from under his instructive supervision, and I learned to value him very greatly both as instructor and friend. He was quick to see a scientific error and fearless in calling attention to it. He stood for the best in science and medical education, and fought for it. He was relentless as a quiz master; but his quizzes brought results. He was tireless in his efforts to make the medical student think clearly and find the bottom of a diagnostic problem. He practiced scientific internal medicine, and taught it when most physicians were looking at the tongue, guessing at the diagnosis, and prescribing 'shot gun' prescriptions. As a matter of fact, I have always felt, since my graduation in medicine in 1898, that Doctor Littig did as much, if not more, to make me respect and honor my alma mater than any other member of the medical faculty, and there are many others of that faculty, who hold an exceedingly high place in my esteem.

As one grows older in the experiences of life, he learns to appreciate those who show their friendliness by their helpfulness, rather than by honeyed words."

WALTER L. BIERRING.

Des Moines, Iowa.

RESOLUTIONS OF APPRECIATION

Lawrence W. Littig, born July 20, 1858, died July 17, 1918, lacking but three days of attaining full three score years. So read the markers which note the beginning and the closing of a busy life. Between these two periods was lived a life of much helpfulness and usefulness.

Much could be said of the early life of Dr. Littig. It is enough, perhaps, to say, briefly, he was industrious from the beginning, earning his way through school for the most part. He acquired his early education in the public schools of his native city, Davenport. This he supplemented by a course at St. Vincent's College, Cape Girardeau, Missouri, whence he graduated in 1880 with the degree of bachelor of arts. Two

years later he received a master's degree from the same institution.

In the fall of 1880 he entered the College of Medicine of the University of Iowa, electing the three years course of instruction instead of two then permissible. The writer of these resolutions attended the same institution at the same date and remembers him as an active, vigorous young man, who stood well in his classes. From his graduation in medicine he had but one desire in life, though a master one, to blaze his way from that day on forward tirelessly, fearlessly, and relentlessly. To this end he entered the University of Pennsylvania in the fall of the same year as his graduation at Iowa, 1883, graduating therefrom in 1884. Entering a very strong competitive examination for admission to Blockley Hospital, Philadelphia, as an intern, he won over many competitors easily. Whence he returned to his home in Davenport where he engaged in the practice of his profession. After two and a half years however he visited Europe spending his time and strength in the hospitals of London, Vienna, Berlin, and Paris, meeting and working under the observation and direction of Billoth, Koch and Pasteur, and many others of the masters of medicine in those days. He was given the marked distinction of being made a Fellow of the Royal College of Surgeons of London as a token of meritorious work.

In 1889 he was invited to accept the chair of anatomy in his alma mater at Iowa. "He preceded me, 'reports dean emeritus J. R. Guthrie' by two days." "He was a wonderfully, faithful teacher," he also adds. Soon after the death, in 1890, of Dean W. F. Peck, Dr. Littig was transferred to the chair of theory and practice, which position he held till his retirement from the faculty in 1903. He was also assistant to the chair of surgery from 1892 to 1902, and for many years was director as well as staff member of the university hospital. Thus was he honored in every possible way by his alma mater.

To enumerate the positions of honor and trust reposed in him during his professional life would be to present a most remarkable succession of honors falling rapidly to a single practitioner through a life-span of but thirty-five years. Besides his membership in the Royal College of Physicians and Surgeons, of London, he was for nearly thirty years continuously either local or district surgeon of the Iowa division of the C. R. I. & P. Railroad; attending surgeon of Mercy and St. Luke's Hospitals, Davenport; a member of the American Medical Association in which he held positions of distinction from time to time upon important committees; a member of the

Iowa State Medical Association all his professional life, serving it with distinction as its president in 1911-12; a member of Scott and Johnson County Medical Societies, in the latter of which he was active as its most efficient and enthusiastic secretary, and its host at its mid-summer meeting at the city park, July 3rd of the current month and year. Dr. Littig was also an active, and welcome member always in the American Association of Railway Surgeons of which he was president in 1916; the Mississippi Valley and the Missouri Valley Medical Associations; the Iowa and Illinois District Associations; the Chicago Medical Society, and the Davenport Pathological Club, beside many other societies of distinction and usefulness of the Middle West.

So busy a man had too little time at his disposal to figure large in the social and political affairs of his state and communities in which he spent his life. It is enough, perhaps, to say he was a forceful figure wherever he was and in whatever he did. He was married June 4, 1895 to Miss Amy Duckett of Utica, New York. Five children, two daughters and three sons, blessed their union, all of whom with the devoted and stricken wife survive him. To all of them, as a faculty, we tender our sincere sympathy. It is also directed that these resolutions be spread upon the records of the faculty, and copies be sent to the bereaved family, and also to the Journal of the Iowa State Medical Society.

Signed—

C. S. CHASE.

HENRY ALBERT.

THREE HUNDRED YEARS AGO

We were interested in an abstract from the work of a famous English surgeon, John Woodall, written in 1617. The method of treatment did not differ materially from the treatment of today, but we were arrested in the reading by the frame of mind manifested by the surgeon himself. We have read in recent years many case histories of successful operations, but none quite like Dr. Woodall's.

"A certain poor maid or woman called Ellin French, who was given to pilfering, and being accused thereof by her master and mistress used to curse and swear with words of execration to wish that if she had committed the crime she stood accused of, that then her legs and hands might rot off, the which thing, accordingly, no doubt, by the Providence of God, came to pass as a judgment upon her, namely that both her legs, almost to the gartering place, with parts of seven of her fingers did rot, the which wretched woman nevertheless being referred to

me in Saint Bartholomew's Hospital to be cured, by God's mercy and permission I healed her perfectly by cutting off both the sphacelated legs in the mortified parts, with also part of her seven fingers, all in one morning without pain, terror, or of any loss of blood unto her in the taking of them off, and made her perfectly whole in a very short time, namely within three months, so merciful is our God unto vile creatures when we are most unworthy of such his mercies. She is at the instant writing herself also living."

The children's Bureau of the U.S. Department of Labor, Washington, D.C., has planned a three-fold drive for Child Welfare for 1918. The first step is the measuring and weighing of every child under five in the United States; the second, a drive for more public health nurses; and the third the training of home health volunteers. The doctors and nurses of the country are most earnestly requested to make every weighing and measuring test possible, to record these findings on a blank furnished by the government and on the same blank note any obvious defects the child may have. These cards should be signed by the doctor or nurse, and the degree, M.D. or R.N., indicated so that when the facts are tabulated, the results may be acceptable for statistical purposes. The local committee of the Women's Committee of the Council of National Defense, through whom the plans of the Bureau are being executed, are requested to save the time of the doctors by ascertaining what hour will be the most convenient for these examinations and by submitting a list of the children to the doctors, together with the government blanks. The clerical part of the blanks may be filled in by doctor's office help, thereby saving the doctor's time for the weighing and measuring test, the observance of the child for defects, and unless the parents insist upon taking time for prolonged consultations, the doctors are not expected to charge for this service. The average examination can be made in fifteen minutes.

STAND BEHIND THE BOYS

How many doctors have applied this now very expressive phrase to themselves? There is nothing that puts more heart and gives so much confidence to a soldier in the thick of a fight, than the thought that if he does suffer a casualty, he will receive proper medical care and attention. What are you doing in this respect?

There are many boys, sons of your patients or friends who have been or will be called into the service, and what a source of consolation it would be to the parents to know that possibly their own doctor might be the one to look after their boy and they will welcome your acceptance of a commission in the Medical Reserve Corps and compliment you for so doing.

The opportunity for you to do the most good in a professional way to the greatest number of people, is to offer your service to your country through the Medical Reserve Corps. Do not think longer about it, but apply at once to your nearest medical examining board, and if you are not informed of its locality, the editor of this Journal will supply the necessary information.

Stand by our boys, your boys, their boys. Remember the gallant French in '76, the British who stood by Dewey in 1898, the Garibaldis who were always for liberty.

The rapid expansion of the Army calls for a largely expanded Medical Reserve Corps. The Surgeon General has issued a most earnest appeal for doctors. The department has reached the limit of medical officers available for assignment.

An Imperative Appeal for Medical Officers

An urgent and imperative appeal has just been issued by the Surgeon General of the United States Army, for doctors for the Medical Reserve Corps.

There are today, 15,174 officers of the Medical Reserve Corps on active duty and the Medical Department has reached the limit of medical officers at the present time available for assignment. With these facts before the medical profession of this country, we believe that every doctor who is physically qualified for service between the age of twenty-one and fifty-five years, will come forward now and apply for a commission in the Medical Reserve Corps.

The Surgeon General says: "So far the United States has been involved only in the preparatory phase of this war. We are now about to enter upon the active or fighting phase, which will make enormous demands upon the resources of the country." The conservation of these resources, especially that of man-power, depends entirely upon an adequate medical service.

Drafts of men will continually follow drafts, each of which will require its proportionate number of medical officers, and there are at this time on the available list of the Medical Reserve Corps, an insufficient number to meet the demands of these drafts.

The real necessity for the complete mobilization of the entire profession is imperative. It is not a question of a few hundred men volunteering for service, but of the mobilization of the profession for the conservation of the resources of this country. Let every doctor who reads this editorial and appeal from the Surgeon General, which appeal is based upon dire necessity, act promptly and present his application for a commission in the Medical Reserve Corps at the nearest medical examining board. If you are not informed of the location of your board, the editor of this Journal will advise you.

Dr. D. S. Fairchild, Editor,

Journal of the Iowa State Medical Society.

Professor Stieglitz, Chairman of the Subcommittees on Synthetic Drugs of the National Re-

search Council, has asked me to send you the enclosed letter for publication.

On behalf of the Committee, he also urges that you adopt the Federal Trade Commission's recommendation to use the official name of the licensed drugs in connection with all written articles and advertisements, and if the proprietary brand name is to be used, to place this side by side with the official name.

The official names so far adopted by the Federal Trade Commission are:

Arsphenamine for the drug marketed as: Salvarsan, Diarsenol and Arsenobenzol, etc.

Neoarsphenamine for the drug marketed as: Neosalvarsan, Neodiarsenol and Novarsenobenzol, etc.

Barbital for the drug marketed as Veronal.

Barbital-Sodium for the drug marketed as Medinal and Veronal-Sodium.

Procaine for the drug marketed as Novocaine.

Procaine Nitrate for the drug marketed as Novocaine Nitrate.

Phenylcinchoninic Acid for the drug marketed as Atophan.

Yours truly,

W. A. Puckner.

AMERICAN EXPEDITIONARY FORCES

Circular No. 32

France, June 7, 1918.

1. The following "DON'TS" for the guidance of Medical Officers in gas warfare have been prepared by the Medical Director of the Gas Service and are hereby published.

1. DON'T fail to realize that gas warfare is the most dangerous enemy confronting our army today and that a great number of patients will be gassed.

2. DON'T fail to keep thoroughly posted in all matters pertaining to warfare gasses.

3. DON'T forget that common sense and good judgment are the essential requirements in treating gassed patients.

4. DON'T fail to realize that the enemy uses every kind of device in his endeavors to make gas attacks serious.

5. DON'T fail to realize that the enemy uses many different kinds of gasses, sometimes alone, at other times mixed together. Each gas produces its separate and distinct line of symptoms, and therefore requires its own particular line of treatment.

6. DON'T forget that all gassed cases require: First, rest; second, warmth; third, fresh air; fourth, attention.

7. DON'T permit gassed men to walk, talk, or move about.

8. DON'T fail to realize that all gassed cases should be considered as serious until proven otherwise.

9. DON'T fail to keep all gassed cases under strict observation during the first forty-eight hours.

10. DON'T forget that lung irritants such as phosgene and chlorine act early and that deaths in the trenches or front lines during a gas attack are probably due to one of these gasses.

11. DON'T forget that the lesions produced by warfare gasses are: (a) Lesions resulting from local actions of the gas. (b) Lesions due to complications and mechanical results of local action. (c) Lesions due to general toxic effects.

12. DON'T forget that disturbances caused by mustard gas are characterized by more or less late symptoms of irritation and by vesicle formation in the integuments and mucous membranes, especially the conjunctival, nasal, pharyngeal, and laryngeal which are produced chiefly by direct action of the vapor and small droplets which are acid mustard gas poisoning.

13. DON'T forget that broncho-pneumonia resulting from secondary infections often follow mustard poisoning.

14. DON'T forget that clothing, linen, blankets, etc., remain for a long time impregnated with mustard gas.

15. DON'T forget that fumes and vapor of mustard gas remain in certain localities for days following gas attacks.

16. DON'T forget that essentials indicated in the treatment of mustard gas poisoning are: 1st, removal of clothing; 2nd, neutralizing of acid gas with an alkaline substance; 3rd, avoiding contact with soiled clothing; 4th, treatment of the eyes, lesions of mucous membranes, lesions of the respiratory tract, lesions of the digestive tract and lesions of the skin.

17. DON'T forget cases of irritant gas poisoning, with severe edema of the lungs, may often be saved by prompt and copious bleeding.

18. DON'T forget that cases of gas poisoning with marked cyanosis are benefited by oxygen inhalations which in order to be efficient should be given continuously. The oxygen to be administered either by mask or introduced into the posterior nares by means of a small rubber catheter connected with the oxygen tank through a double tube in a bottle half filled with water.

19. DON'T place too much reliance on drugs in the treatment of gassed cases.

20. DON'T forget that disorders of the heart which arise after gassing will in some cases make soldiers unfit for active fighting in the front areas.

21. DON'T bandage the eyes. Pressure bandage over the eyes locks up the lids and retains the secretions which after a term of hours may become purulent.

22. DON'T forget that in treating eye symptoms following mustard gas poisoning, it is most important that the use of eye shades or dark glasses should not be continued beyond the inflammatory

stage, otherwise functional photophobia is likely to result.

23. DON'T forget that one group of symptoms often seen in all forms of poisoning, i.e., dyspnoea, pain in the chest, palpitation, rapid pulse, dizziness and fatigue are closely associated with nervous symptoms more frequently than other cases. They cause the most frequent contributions of partial or complete unfitness for further military duty.

24. DON'T forget that the symptoms enumerated above rarely follow mustard gas poisoning.

25. DON'T forget that in this class of patients prolonged rest in bed is contra-indicated. They should be given graduated exercises and their physiological reaction to these should be carefully noted.

26. DON'T forget that prolonged stay in hospitals is particularly apt to exaggerate neurotic conditions which are difficult to overcome.

27. DON'T forget that vomiting and stomach trouble which persists after mustard gas poisoning is usually functional, especially when occurring some months later.

28. DON'T forget that the nervous symptoms which follow gas poisoning are generally functional resembling exactly "Traumatic Neurosis".

29. DON'T forget that pulmonary cases following mustard gas poisoning are the most important. They entail prolonged absence from military duty and may simulate tuberculosis (pulmonary) so closely that it will be difficult to decide in some cases, whether tuberculosis exists or not.

30. DON'T forget that it is often difficult to differentiate between slightly gassed cases and malingering, so don't be misled by the later condition.

SURGICAL DON'TS FOR TRAUMATIC SHOCK

DON'T annoy, delay, nag, and further injure by taking off shoes or clothing in front area.

DON'T forget to throw Thomas splints as far forward as the soldier goes.

DON'T forget that there is a man as well as a wound; the man may be killed while the wound is being saved.

DON'T forget that the bottom of the stretcher needs blankets as well and more than the top of the man.

DON'T forget value of reassurance.

DON'T give stimulants—the patient is not in need of stimulants—for the battle is a stimulant; the whistling and bursting of shell is a stimulant; the shattered bone is a stimulant; in other words.

DON'T give the soldier an overdose of the thing which is killing the man. In doubt, don't delay, but give blood transfusion. By the time death is 100 per cent. assured, failure of treatment is 100 per cent. assured.

DON'T do a 10 per cent. mortality anatomical operation when there remains only a 5 per cent. physiological chance of life.

DON'T fail so to organize and equip and instruct each sector of the army from regimental surgeon to the base hospital that an approximate uniformity of conception and practice may be established.

DON'T establish a ward for the survival of the fittest, but strive to make everyone fit to survive.

TREATMENT OF SHOCK ON THE FIELD

Defeat and mud are powerful factors in shock. The best prophylactic treatment of shock is:

1. To hold the battle field, i.e., to be stronger than the enemy and to have artillery which silences his.

2. To bring in the wounded speedily; prisoners should be employed for the purpose as the regimental medical service is insufficient.

3. To have a well organized regimental service. Each stretcher bearer, each officer, each man, if possible, should know how to fix a garrot. The use of the garrot has been much criticized, but if it causes the loss of a limb, it may save a life. Many men die unnecessarily from hemorrhage on the battlefield and at the ambulance.

4. A more general use should be made, even at the first aid post, of morphine, camphorated oil, ether and serum.

NOTES FROM GERMANY

Small Pox: Kirchner in *Ztschr f Artztl. Fortbild* 1898, 15, 26-9, reports 400 cases of small-pox in Berlin and 40 deaths in 1917 and in the German empire 4000 cases and over 400 deaths. The insufficiently vaccinated were the victims. He advised all people over 35 to be re-vaccinated.

Malaria: Delille Paisseau and Lemair Ann de Me'd 1917, 5, 675-691, report upon the severity of malaria in Macodonia in 1916-17. Capsules of 6-9 gr. of quinine were given to entire command every night and soldiers whose urine did not show presence of the drug by Tanret's tests the next morning were punished. Admissions for malaria amounted to 12 per cent. of total admissions to hospitals.

Famine Edema: Famine Edema or the so-called "Kriegsoedem" of the Germans is well described by Capt. F. A. Park who as a prisoner (M.O. of Canadian Infantry Battalion) at Minden acted as camp physician and observed all stages of the disease among Russians, Roumanians, English and French who had no private food packets from home. The condition is the result of a diet almost as free from wholly fat and with very scanty protein. When well established it is frequently complicated by colitis with high mortality. The ration issued by the German government to prisoners of war is insufficient to maintain life and must be supplemented by food from home.

Epidemic Fever of Unknown Origin: Uffenorde u. Much. *Deutsch. Med. Wohnschr.* 1918, 44, 57-59, describe a benign grippe-like epidemic disease prevalent in the summer and autumn of 1917 in Germany and on the Eastern front, which in many respects resembles the epidemic which has recently prevailed throughout the A. E. F. The German reporters consider this disease distinct from influenza, dengue, and papataci fever and leave the etiology undetermined.

Sharply localized outbreaks of the so-called three day fever continue to occur in the A. E. F. in one of which cases showed such marked meningeal symptoms and high fever (temperature) that the cases were sent to the hospital with clinical diagnosis of "meningitis".

A small outbreak of true influenza has been reported from a division in which the infection was acquired through contact with Canadian troops among whom there had been numerous cases of influenza as confirmed bacteriologically.

Vincent's Disease: In the March bulletin of the Canadian Army Medical School, 1918. 1. 4-6 Major Bowman notes the importance of Vincent's organisms in throat infections. Of 255 suspicious cases 21 were due to Vincent's bacillus, often associated with large and cript laden tonsils, with bad teeth and commonly heavy smokers. The disease is frequent in spring, rare in the summer and reappears in the autumn. Beyer, a dentist, reports in *Med. Klin*, 1918, 14, 63-4 200 cases of pyrrrhoa alveolaris due to Vincent's organisms and considers that Vincent's disease, ulcerative mercurial stomatitis and noma are all caused by the symbiosis of spirochaets with Vincen's fusiform bacilli. Of 78 cases 77 were true ulcerative stomatitis and gingivitis studied, 74 showed Vincent's organism, 28 ulcerative gingivitis, 27 mixed stomatitis and gingivitis, and 6 showed tonsillar and pharyngeal ulceration.

IOWA MEDICAL MEN IN THE WAR

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Capt. Harry J. Schott, Sioux City.

To Camp Forrest, Chickamauga Park, Ga.; for duty, Capt. Erie D. Tompkins, Clarion.

To Camp Jackson, Columbia, S. C., for duty from Dansville, Lieut. Milton A. Given, Des Moines.

To Camp Lee, Petersburg, Va., base hospital, from Fort Oglethorpe, Capt. Calvin W. Harned, Des Moines. For duty, from Fort Riley, Lieut. John R. Christensen, Eagle Grove.

To Camp Lewis, American Lake, Wash., for duty, from Douglas, Lieut. Arthur L. Druet, Larchwood.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Capt. George R. Hill, Charter Oak.

To Camp Pike, Little Rock, Ark., as orthopedic surgeon, from Boston, Capt. Earl D. McClean, Os-

kaloosa. For duty, Lieut. Raymond L. Latchem, Walnut.

To Fort Oglethorpe for instruction, Capts. Nelson McP. Whitehill, Boone; Erie D. Tompkins, Clarion.

To Hoboken, N. J., for duty, Lieut. Chester H. Johnson, Cherokee; from Camp Grant, Lieut. Elliott S. Young, Iowa City.

To report by wire to the commanding general central department, for assignment to duty, Lieut. Morton Lyon, DeWitt.

To Rochester, Minn., Mayo Clinic, for instruction and on completion to Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. William J. Egloff, Mason City.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Sevier, Greenville, S. C., base hospital, Lieut. Dean H. Osborn, Monticello.

To Camp Dodge, Des Moines, Iowa, for duty, Capt. Edward D. Morrison, Barnum; Lieut. William E. Anspach, Colfax.

To Camp Pike, Little Rock, Ark., for duty, Capt. John R. Walker, Fort Madison.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Army Medical School, Major Harold A. Spilman, Ottumwa; Lieut. Donald H. Pitts, Mondamin.

To Colonia, N. J., for duty, from New York City, Lieut. Jacob J. Sybenga, Pella.

To Fort Des Moines, Iowa, base hospital, Lieut. Frederick C. Nilsson, Laurens.

To Newport News, Ia., for duty, from Army Medical School, Lieut. John W. Billingsley, Monroe.

Captain Harry R. Reynolds has been ordered to report from Ft. Riley where he has been on duty as instructor in infectious diseases, to Camp Wheeler, Macon, Georgia, where he will assume similar duties.

It is reported that Dr. C. N. O. Leir is being treated in a hospital in France for a gas poisoning in a recent German raid.

Major W. S. Conkling, serving as surgeon of 168th Regiment, 42nd Division (Rainbow), in France, has been assigned to Headquarters, as director of Field Hospitals.

Lieut. C. N. O. Leir of the Des Moines medical service with the One Hundred and Sixty-eighth Infantry in France, has been promoted to a captaincy.

To Allesandro, Calif., as flight surgeon, from Mineola, Captain Murdoch Bannister, Ottumwa.

To Camp Dodge, Des Moines, Iowa, Base Hospital, Capt. Albert H. Myerdyck, Mt. Pleasant; Lieuts. Albert A. Schultz, Fort Dodge; Austin C. Davis, Iowa City; Guy A. Lott, St. Ansgar.

To Camp Lewis, American Lake, Washington, base hospital, Lieut. Loran M. Marin, Fort Dodge.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. Charles W. Tidball, Independence.

To Camp Shelby, Hattiesburg, Miss., base hospital, Capt. William C. Newell, Ottumwa.

To Camp Travis, Fort Sam Houston, Texas, base hospital, Lieut. Charles D. Martin, Davenport.

To Fort Oglethorpe for temporary duty, Lieut. Walter H. Grimwood, Fort Madison.

To Fort Riley for instruction, Lieut. Harold A. Householder, Winthrop.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Camp Sevier, Lieut. Otto J. Blessin, Postville.

Honorably discharged on account of physical disability not incident to the service, Lieut. Cyril G. Field, Humboldt. On account of physical disability existing prior to entrance into the service, Lieut. Walter G. Finley, Mondamin.

To Camp Beauregard, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. Arthur J. Ross, Perry.

To Camp Bowie, Fort Worth, Texas, base hospital, from duty as a private, Lieut. Harry H. Dilley, Des Moines.

To Camp Custer, Battle Creek, Mich, base hospital, Lieut. Charles H. Mulroney, Camp Dodge.

To Camp Devens, Ayer, Mass., for duty, from Camp Custer, Capt. Edward S. Parker, Ida Grove.

To Camp Gordon, Atlanta, Ga., for duty, from Fort Oglethorpe, Lieut. Isaac H. Odell, Des Moines.

To Camp Grant, Rockford, Ill., base hospital, Capt. Isaac E. Nerbig, Sioux City. For duty, from Fort Riley, Lieut. John T. Hanna, Kellogg.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. James S. Cooper, Burlington; Albert E. Acher, Fort Dodge.

To Fort McPherson, Ga., for duty, from Camp Cody, Lieut. Gus B. Young, Des Moines; from Camp Dodge, Lieut. James A. Porter, Hedrick; from Camp Greene, Lieut. Arthur E. Shappell, Knoxville; from Camp Lewis, Capt. Carl J. Snitkay, Belle Plaine.

To Fort Riley for instruction, Capts. Roy Moon, Glenwood; John E. Brinkman, Waterloo; Lieuts. Edwin C. Yoder, Iowa City; Howard L. Sieg, Marshalltown; Roydon B. Yoder, Northwood; Malcolm D. Winter, Truro; Wellwood M. Nesbit, Waterloo; Paul G. Ingham, Whiting.

To report by wire to the commanding general, Central Department, for assignment to duty, Lieut. Edward A. Couper, Britt.

To Morrison, Va., for duty, from Fort Oglethorpe, Lieut. George A. Bemis, Garner.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. Sidney J. Jones, Fort Dodge.

To Boulder, Colo., University of Colorado, to make physical examinations and give medical attention to drafted men, from Fort Riley, Lieut. Leonard J. Bowman, Masonville.

To Camp Dodge, Des Moines, Iowa, as orthopedic surgeon, from Boston, Lieut. Theodore A. Willis, Iowa City.

To Camp Logan, Houston, Texas, for duty, from Fort Riley, Lieut. Irvin J. Sinn, Williamsburg.

To Fort Oglethorpe for instruction, Major Philip B. McLaughlin, Sioux City; Capts. Paul H. Schaefer,

Burlington; Herbert M. Decker, Davenport; Lieuts. John D. Cantwell, Davenport; Lysle C. Howe, James W. Wilson, Milton; Earl R. Leonard, Rock Valley.

To Fort Riley, with the board examining the command for nervous and mental diseases, from Camp Bowie, Lieut. Percy B. Battey, Independence.

To Fort Wadsworth, N. Y., for temporary duty, and on completion to his proper station, from New Haven, Lieut. Milton D. Jewell, Decorah.

To Newport News, Va., for duty, from Fort Riley, Lieut. Joseph W. B. Flageolle, Sioux City.

Capt. Evan S. Evans, of Grinnell, has been assigned to duty at Camp McArthur.

Major P. B. McLaughlin, of Sioux City, has been ordered to Camp Greenleaf.

Lieut. S. B. Chase, of Fort Dodge, and Lieut. W. H. Grimwood, of Fort Madison, have been ordered to Fort Oglethorpe.

Capt. Earl D. McClean, of Oskaloosa, who has been taking a course in orthopedic surgery, at Harvard, has been sent "over seas" for a twenty weeks' course under Sir Col. Robert Jones, in a Liverpool hospital.

Lieut. Corwin S. Cornell, of Knoxville, is in the British service at the Scottish General Hospital, Aberdeen, Scotland.

Supplement to list of Iowa physicians who have been recommended by the Surgeon-General for commissions in the Medical Officers' Reserve Corps.

Frederick Henry Rodemeyer, 1st Lieut., Alexander.
 James Bolton Knipe, 1st Lieut., Armstrong.
 Charles Bernard Burke, Capt., Atlantic.
 Delmar B. Sollis, 1st Lieut., Bedford.
 Maurice Arthur Healy, Capt., Boone.
 James Swaney Cooper, 1st Lieut., Burlington.
 Paul Henry Schaefer, Capt., Burlington.
 Charles Stephen James, Capt., Centerville.
 Robert John Matthews, 1st Lieut., Clarinda.
 Harry Ernest McCall, Capt., Clearfield.
 Leslie Louis Carr, 1st Lieut., Clermont.
 William Earl Anspach, 1st Lieut., Colfax.
 George Braunlich, 1st Lieut., Davenport.
 John Dalzell Cantwell, 1st Lieut., Davenport.
 James William Fonda, 1st Lieut., Defiance.
 Leland Oren Carey, 1st Lieut., Des Moines.
 Harry Horace Dilley, 1st Lieut., Des Moines.
 Harry E. Ransom, 1st Lieut., Des Moines.
 James Hugh Eruce, 1st Lieut., Dickens.
 Harvey B. Gratiot, Capt., Dubuque.
 Charles Atwell Kearney, Capt., Dubuque.
 Clarence Ambrose McGuire, 1st Lieut., Dubuque.
 Jesse James Beatty, 1st Lieut., Farragut.
 John Milton Garrett, Capt., Fort Dodge.
 Sydney David Jones, 1st Lieut., Fort Dodge.
 Charles H. Mulroney, 1st Lieut., Fort Dodge.
 Albert Andrew Schultz, 1st Lieut., Fort Dodge.

John Franklin Studebaker, Capt., Fort Dodge.
 Rupert Connor Herrick, 1st Lieut., Gilmore City.
 Roy Moon, Capt., Glenwood.
 Channing Gamaliel Smith, 1st Lieut., Granger.
 Lloyd Thomas Reed, 1st Lieut., Gravity.
 Evan Stark Evans, Capt., Grinnell.
 Charles Willis Tidball, 1st Lieut., Independence.
 Charlie Everette Chenoweth, 1st Lieut., Iowa City.
 Charles Davis Harlan, Capt., Keswick.
 John Robert Wright, 1st Lieut., Knoxville.
 Charles Albert Manahan, 1st Lieut., Marengo.
 Albert Dwight Smith, 1st Lieut., Mason City.
 Lysle Clarence Howe, 1st Lieut., Milton.
 William Howard Johnston, 1st Lieut., Muscatine.
 Sylvester Ellsworth Hinshaw, Capt., Newton.
 Boyden Benedict Yoder, 1st Lieut., Northwood.
 William Carl Newell, Capt., Ottumwa.
 Egbert Wilson Sproule, 1st Lieut., Peterson.
 Robert S. Shane, 1st Lieut., Pilot Mound.
 Earl Renshaw Leonard, 1st Lieut., Rock Valley.
 Edward L. Hollis, 1st Lieut., Rolfe.
 William J. S. Cremin, 1st Lieut., Sioux City.
 George William Koch, Capt., Sioux City.
 Philip Benedict McLaughlin, Major, Sioux City.
 Isaac Eugene Nervig, Capt., Sioux City.
 Winfield March White, 1st Lieut., Sioux City.
 Guy Alexander Lott, 1st Lieut., St. Ansgar.
 Edwin Ruel Wheeler, 1st Lieut., Swingle.
 Frederick William Fletcher, 1st Lieut., Thurman.
 Richard Huisenga, Capt., Rock Valley.
 John Edward Brinkman, Capt., Waterloo.
 Edwin Thompson Jaynes, Capt., Waterloo.
 Edward Louis Rohlf, Capt., Waterloo.
 Merritt Nelson Gernsey, 1st Lieut., Waverly.
 Charles Henry Graening, 1st Lieut., Waverly.
 Frank Henry Dierker, 1st Lieut., West Point.
 Harold A. Householder, 1st Lieut., Winthrop.
 William Vestal Thornburg, 1st Lieut., Yale.

METHODS OF CONTROL OF THE CLOTHES LOUSE

Some experiments by William Moore of St. Paul and published in the Journal of Laboratory and Clinical Medicine for February, 1918, are interesting as showing the value sachets containing certain vaporizing chemicals worn by soldiers and others who are exposed to the annoyance of the clothes louse.

It has been suggested that sachets containing volatile substances be worn about the neck and the waist of the soldier. To establish the value of these recommendations, Dr. Moore undertook a series of experiments to show what agents would kill the parasite without serious annoyance to the soldier. The conditions were that this substance should be sufficiently volatile to give off a vapor destructive to the parasite. Naphthalen, camphor, sulphur and paradichlor benzene were used. The gas given off from these agents, passing through the clothing did

not kill the lice or prevent the hatching of the eggs although the vapor from the same substances in a glass jar was quite effective in destroying the parasite. It would appear that the rapid diffusion of the gas through the clothing prevented sufficient concentration to kill the lice and the eggs.

ENGLISH ARMY MEDICAL ADVISORY BOARD

The English Army Medical Advisory Board, established in 1901, has been in abeyance since the beginning of the present conflict. It has now been considered advisable to appoint a new advisory board somewhat differently constituted and with a smaller number of members. The Director-General, Lieutenant-General T. H. J. C. Goodwin, C.B., C.M.G., D.S.O., is president and the other members are Major-General Sir Bertrand Dawson, G.C.V.O., C.B., M.D., Major-General Sir Berkeley Moynihan, C.B., F.R.C.S.; Colonel W. H. Horrocks, C.B., A.M.S.; Colonel Sir Robert Jones, C.B., F.R.C.S., and Lieutenant-Colonel Sir Harold J. Stiles, F.R.C.S. Sir Bertrand Dawson, who is physician with the British Expeditionary Force in France. Sir Berkeley Moynihan, who is surgeon to the Leeds Infirmary, is consulting surgeon to the Northern Command. Sir Robert Jones is the Inspector of Military Orthopaedics, and Sir Harold Stiles of Edinburgh is Assistant Inspector of Military Orthopaedics for Scotland and was a member of the commission of inquiry in France. Colonel Horrocks, who was a member of the old board, again serves on the new board as sanitary expert. The secretary is Mr. A. T. Gann, who was the secretary of the old board. It will be observed that the new board does not contain, as did its predecessor, representatives of the India office and of the directorates of military operations and of fortifications and works.

ARMY SURGEONS PROMOTED

Dr. J. M. T. Finney and Dr. William S. Thayer, Chief Consultants of the Medical Service of the American Expeditionary Forces have received promotions advancing their rank from Major to Colonel. The following named officers have been promoted from Major to Lieutenant-Colonel: Thomas R. Boggs, James T. Case, George W. Cole, Harvey Cushing, Jewel W. Golthwait, James F. McKernon, Charles H. Peck, Thomas A. Salmon, Hugh H. Young, N. Allison and E. L. Keyes.

PUBLICATIONS BY ARMY MEDICAL OFFICERS

As stated in the circular "Memorandum for Editors of Medical Publications" recently issued by the Surgeon-General's office, all medical manuscripts by medical officers of the Army intended for publication should be first submitted to the Board of Pub-

lications, Surgeon-General's office, Washington, D. C., for censorship and approval. The authors are requested to send in two (2) typewritten copies of their manuscripts to the Board of Publications, care being taken that the manuscripts are double spaced. Attention to this detail will facilitate handling of the manuscripts, both by censors and publishers.

By direction of the Surgeon General.

(Signed) C. L. FURBUSH,
Colonel, Medical Corps, N. A.

The present world war is stopping the onward march of civilization in many directions; it is even forcing disorganized retreat that will require decades to recover. But, on the other hand, the stress is making science, arts, and industry accomplish a ten-year advance in one year.

In the United States it is bringing about a realization that the time of isolation with untold possibilities is past, and that the life of the individual and of the nation must be patterned so as to permit competition with the wide world. One result is that abuses and wrongs which in peace would have taken a decade of legislation to correct are now adjusted in a single session of Congress.

In former days the surgeon's apprentice handed out to his master's patients the desired decoctions and boluses; a similar situation exists today in the Medical Department of the Army, which is forced to depend on untrained men to perform the services that in private life the professionally trained pharmacist is required to perform. However, the cry for still greater efficiency in the Medical Department of the Army gives promise that ere long a corps of professionally trained pharmacists will be placed under the command of Surgeon-General Gorgas. A bill with this in view has been introduced in the House of Representatives by George W. Edmonds: "A bill to increase the efficiency of the Medical Department of the United States Army, to provide a Pharmaceutical Corps in that Department, and to improve the status and efficiency of the Pharmacists of the Army."

This bill, introduced in July last year, was referred to the Committee on Military Affairs and, to judge by the activity and the enthusiasm of leading pharmacists, is likely to come before Congress during the present session.

The following are the essential sections of the Edmonds' Bill: (Sections 2 and 3 of the Edmonds' Bill are then quoted in full.)

SYSTEMATIC CANVASSINGS OF THE COUNTRY ARE THROWING MUCH LIGHT ON THE EXTENT OF THE DISEASE

The American Review of Tuberculosis, for June, comments editorially on the present interest in the discovery of unsuspected or concealed tuberculosis by systematic examination of large numbers of people. A survey in 1915-16 by the Michigan Health

authorities showed 44 per cent. of cases clinically tuberculous or potentially such among persons examined because of suspicious symptoms. At Framingham, Mass., the survey still in progress shows fifteen living cases to each death. The selective draft examinations show from 2 per cent. to 6 per cent. of cases. Of unique interest is the house to house canvass made at Saranac Lake, a tuberculosis resort. In a community of 5,000 persons only one-fifth the population settled there for reasons of health and only 441 of these had actual tuberculosis. There were 860 transient residents during the six months' survey.

During 1917, about 1,200 tuberculous visitors reported to the board of health. Only sixteen living cases were of indigenous development, and only four of these were among the strictly native born. The writer suggests as an explanation for this very low rate the absence of crowding and industrial conditions, the large opportunity for outdoor invigoration and the generally higher standard of living. The introduction of a few large mills with their accompaniment of hard labor, dust and crowded tenements would, in all probability, soon bring about a higher incidence of tuberculosis.

THE PRESIDENT-ELECT, MAJOR ALEXANDER LAMBERT

The president-elect of the American Medical Association, Major Alexander Lambert, M. R. C., U. S. Army, is already en route again to France to resume his duties as medical director for the Red Cross. Major Lambert is a member of a noted medical family. His father, Dr. Edward W. Lambert, an executive of ability, was for forty-five years chief medical adviser of the Equitable Life Assurance Society. This executive ability Major Lambert seems to have inherited to a remarkable degree, as indicated by his achievements. Dr. Lambert was born, December 15, 1861, and received his A.B. from Yale in 1884, his Ph.D. in 1885, and his M.D. degree from the College of Physicians and Surgeons of Columbia University in 1888. After two years' service as an intern in Bellevue Hospital he entered on the active practice of his profession. He became attending physician at Bellevue Hospital in 1894, served as assistant bacteriologist in the New York Health Department from 1894 to 1901, and since 1898 has been professor of clinical medicine in the Cornell University Medical College. He has been attending and consulting physician in several New York hospitals, and is recognized especially for his work in circulatory disease and in the treatment of drug and alcohol addictions. In the American Medical Association he has served in the House of Delegates as a representative of the great State of New York, became a member of the judicial council in 1911, and has been chairman of that body since 1912. As chairman of this council he worked in co-operation with a committee of the Council on Health and Public

Instruction in the compilation of much material and in the issuing of notable reports on workmen's compensation and health insurance. In 1917 he became president of the Medical Society of the State of New York. Since 1907 he has been a member of the Medical Reserve Corps of the United States Army; a brief month after the United States entered the war he was ordered to active duty in France as deputy commissioner of war relief of the Red Cross and chief medical adviser of all American Red Cross activities in France and Belgium. His election to the presidency of the American Medical Association is but another recognition of services well rendered with an adequate conception of the duties of a physician to himself, to the public, to the state and to the nation. It does not mark, we are sure, the culmination of an already noteworthy career; it is but the placing of an earnest worker in a position in which he can render still greater service to worthy activities.—*Jour. A. M. A.*, June 22, 1918.

AN ENGLISH APPRECIATION OF AMERICAN M. R. C. OFFICERS

Colonel Furbush, of the Surgeon-General's office, sends the following excerpts from a letter which he received from Lieut.-Gen. T. H. Goodwin, director-general of the British Medical Service. The letter is dated May 8:

"This is only a short line as I am extremely busy. I would like to give you an extract from a letter which I have just had from G. H. Q. in France. It runs as follows:

"The casualties amongst medical officers during the week have been twenty-three, of whom three were killed. Five of the casualties were amongst medical officers of the U. S. A. attached to British battalions or field ambulances, four being "gas" casualties and one "missing" casualty. The work of these U. S. A. medical officers deserves special recognition. They have been invaluable and have worked under the most trying conditions and with great gallantry."

"I thought you would like to know this, and I should be much obliged if you would show it to the director-general. You are, of course, entirely at liberty to make it known in whatever way you wish, in fact, I should be glad if you would do so for I feel strongly how much we owe to your country, and I should like your people to know how well your medical officers are doing. * * *

General—then Colonel—Goodwin, it will be remembered, was in this country for over a year, and a large number of our readers will have personal remembrance of him.

It is gratifying to read the message General Goodwin sends. It must be borne in mind that the letter from which General Goodwin sends the quotation was not written with the idea that it would be presented to American readers, but for "home consumption."—*Jour. A. M. A.*, June 8, 1918.

MEDICAL EDITORS' ASSOCIATION

Herein find abridged minutes of the last meeting of the American Medical Editors' Association held in Chicago on June 10th and 11th.

The executive committee desires me to particularly call your attention to the resolution unanimously passed, according full support to the Surgeon-General of the Army and of the Navy and the Council on Medical Defense, and requesting that you aid by every means editorially, to bring before the profession the important needs of these departments.

The minutes of the previous meeting were read and approved. The treasurer's report showed a balance of \$512.59 cash. The association approved the action of the executive committee in appropriating \$100 to the Periodical Publishers' Association for carrying on an educational campaign against the zone system of second class rates.

The association approved the propaganda carried on by the secretary in aid of the Surgeon-General's office in securing additional applicants for the Medical Reserve Corps and a letter was read from the Surgeon-General expressing appreciation of the aid rendered.

Of the \$250 appropriated at our 1917 meeting less than \$100 of the amount was expended for the above purpose.

The following resolution was unanimously passed and it is earnestly hoped that every member of this association will lend his undivided aid in its promulgation.

"Firm in our belief of winning the war in conjunction with our valiant Allies, yet fully realizing the necessity and need for an adequate medical corps both as to numbers and training, we, the American Medical Editors' Association in session at Chicago, Illinois, June 11, 1918,

"Be it Resolved:

"First: We pledge our renewed effort to Surgeon-General Gorgas of the United States Army, and to Admiral Braisted, Surgeon-General of the United States Navy, and to the Medical Section, Council of National Defence, in that our pages are open to unlimited editorial space for properly approved copy in which to bring before the medical profession of the United States the needs of these most important departments.

"Second: That an Editorial War Committee be appointed by the chairman composed of H. Edwin Lewis, editor of American Medicine, New York; D. E. de M. Sajous, editor of the New York Medical Journal and the president and secretary to prepare copy and to energetically carry on this work.

"Third: That this association contribute a sum of money in addition to the appropriation made by this Society at its session, June 10, 1918, limited only to the resources of this association, the expenditure of the amount to be decided by the executive committee for carrying on this propaganda of education and aid.

"Fourth: That the editor of every medical journal in the United States be invited and encouraged to

participate in this very necessary work.

"Fifth: That copies of this resolution be sent to W. C. Gorgas, Surgeon-General of the U. S. Army, to Admiral Braisted, Surgeon-General of the U. S. Navy and to the Medical Council of National Defense."

Following Dr. Sajous' paper upon "Military Education in Medical Colleges and the Medical Press" a motion was introduced and carried that this association appoint a committee to study this question and report to the president if any action was deemed necessary.

A resolution introduced by Dr. Fairchild, urging that the American Medical Editors' Association use its influence and encourage its members to support the passage of the Dyer Owen Bill, and that a copy of the resolution be sent to Senator Owen.

A resolution was introduced and carried that the executive committee appropriate a sum to the Periodical Publisher's Committee through Dr. H. Edwin Lewis, chairman, to aid in educating the laity in reference to the zone system of mailing second class matter.

The nominating committee composed of Dr. C. E. de M. Sajous and Dr. F. H. McMechan in their report for officers of this association for 1918-1919 recommended that in view of the first and second vice-presidents being in the military service, that the officers of 1917-1918 hold over until the next annual meeting.

This resolution was received and favorably acted upon.

SACCULI AND DIVERTICULI OF THE LARGE INTESTINE

Hamilton Drummond of England in the British Journal of Surgery writes some interesting observations on sacculi and diverticuli of the large intestine. The sacculi are always multiple and occur in elderly people, are acquired and in the great majority of cases are found in the pelvic colon, vary in size from a hemp seed to a hazel nut. After considering the various theories in relation to the causation of sacculi Dr. Drummond shows that they are probably due to a general deficiency of the non-stricted muscle tissue of the individual and that chronic nervous congestion and intestinal obstruction are not important in their etiology. He holds that they make their appearance between the mesenteric and longitudinal muscular bands and after piercing the muscle coat of the intestine follow the sheaths of the vessels towards the mesentery.

Dr. Drummond holds that this term diverticulum should be reserved for congenital conditions and should not be applied to acquired sacculi. Tilling and Gruner in another part of the same Journal uses the term diverticulum for both the congenital and the acquired conditions and makes the distinction that in the congenital conditions all three coats of the bowel are involved while in the acquired forms only the serous and mucus coats enter, also that this is not strictly true as in the early stages of the

acquired forms all three coats of the bowel may be found.

Tilling and Gruener give us as the most widely accepted cause of diverticula formation, increased pressure in the bowels, and are essentially pulsion diverticula, but admits in many cases a congenital predisposition which means a weakness of the muscle, which Dr. Mourges finds these diverticula or saccula frequently associated with various visceral ptoses resulting from a generally weak and relaxed abdominal musculature. These observations are interesting in that they show a diversity of opinion as to diverticuli formations. Of greater importance are the secondary changes liable to occur; the most important of which are inflammatory processes of varying type and intensity. The mechanical irritation from fecal masses combined with microorganisms, the thin walls of the sacculi, which permits the passage of microorganisms to the peritoneum, setting up acute peritonitis render diverticuli a source of constant danger.

In chronic forms of inflammation a thickening of the mucosa results which so frequently occurs in the sigmoid colon as a perisigmoiditis and becomes occasionally the seat of carcinoma.

The clinical significance of acute and chronic inflammation of diverticuli are briefly considered. The dangers of perforation in acute forms or the passage of microorganisms to the peritoneum with resulting peritonitis. In chronic forms of inflammation, involution, and the danger of carcinoma resecting all diverticuli bearing bowel should be considered.

COLUMBIA UNIVERSITY PLANS PAY DIAGNOSTIC CLINIC

The trustees of Columbia University announce that plans are under consideration for the establishment of a large diagnostic clinic which will meet the needs of the middle classes who do not wish to be the recipients of charity and yet cannot afford to pay the fees of a number of specialists whose services may be necessary in order to reach a diagnosis. It is hoped that the clinic may be able to act as a distributing station for a number of hospitals. Dean Samuel W. Lambert, in presenting this proposal, states that he anticipates that there will be considerable opposition to it from the rank and file of the profession, but explains that the plan does not propose to eliminate the family physician. The clinic proposes merely to make the diagnosis and then refer the patient to his family physician for treatment, supplying special advice or suggestions if they are needed. The financial arrangements provide that every clinical worker shall be paid and that the fees charged patient shall be commensurate with their incomes. At the same time that these plans were made public it was announced that the trustees contemplated adding a fifth year to the medical course. During this additional year the candidate for licensure will work in a hospital under college discipline. Plans are also under way providing for additional graduate instruction and research work.

AMERICAN MANUFACTURE OF SALVARSAN

The Federal Trade Commission has entered orders for the license of three firms to manufacture and sell salvarsan under the American name of "arsphenamine." The control of standards and quality of product will devolve upon the Federal Public Health Service. The three firms to be licensed, are the Dermatological Research Laboratories of Philadelphia, the Takamine Laboratory of New York, and the Fabwerke Hoechst Company (Herman A. Metz Laboratory) of New York. The original patent was issued to Paul Ehrlich and Alfred Bertheim, both Germans. It is announced officially that some of the licensees in this country will supply the drug at the price of one dollar per dose to the Army and Navy, \$1.25 to hospitals, and \$1.50 to physicians.

An interesting comparison lies between the action of Ehrlich in patenting salvarsan, and the action of the discoverer of phthalin in also patenting his discovery but in vesting all rights to the patent in a university with the special object of making it universally available and at the same time of turning to beneficent and scientific purposes any financial gain to be derived from it. The Principles of Ethics of the American Medical Association succinctly state, "It is equally derogatory to professional character for physicians to hold patents for any surgical instruments or medicines." The German Ehrlich profited by his salvarsan patent. The American Robertson demonstrated again the prevailing spirit of service and social efficiency which characterizes American medicine and science.—(California State Journal of Medicine.)

TREATMENT OF HEMOTHORAX

Major William Hutchinson of England states that in the beginning of the war they were chiefly interested in the diagnosis of hemothorax and whether or not aspiration of the blood was worth while. It was not long however before aspiration became a routine practice followed very soon by replacing the aspirated blood with oxygen to prevent the unpleasant symptoms sometimes produced by the rapid removal of a large quantity of blood from the pleural cavity.

In the treatment of non-infected hemothorax Major Hutchinson insists that aspiration should be carried out in all cases in which more than two finger breadths of dullness can be made out. In a series of his own consisting of 450 cases 368 were aspirated; in the remainder there was not enough blood to warrant it.

In infected cases, a portion of a rib long enough to allow the hand to be passed through should be removed and the blood allowed to flow out. The clot is then removed by the hand, all parts of the cavity explored and light adhesions broken down. Then, by means of large pieces of gauze on dressing forceps, the remainder of blood and clot is removed. After this the cavity should be washed out with saline, and again mopped out, and a running suture

inserted in such a way as to include the pleura and intercostal muscles. This suture should be quite loose so that a small quantity of some antiseptic can be poured into the pleural cavity. This antiseptic should be spread all over the walls of the cavity by means of a small piece of gauze on long dressing forceps. So soon as this is done the running suture is drawn tight, thus closing the pleura completely. The muscles and skin are then closed and a dry dressing applied. Forty-eight hours after the operation the chest should be aspirated, thus removing a quantity of serum and air. This is done for two reasons: first the serum by that time has lost its bactericidal properties, and then becomes a menace; and secondly, by removing a good deal of the air from the pleural cavity, a negative pressure is obtained, which helps to re-expand the lung. It will be found that three or four aspirations are necessary during convalescence. The antiseptics used by Major Hutchinson include eusol 1 in 2. A suspension of bipp in liquid paraffin—bipp $\frac{1}{2}$ oz., liquid paraffin 6 oz., Flavine solution 1-5000, and normal salt solution, the amount left in the pleural cavity 3 oz.

Cigars have a bad reputation with certain very excellent people and are supposed to accomplish many harmful things. To determine some bacteriological facts Professor R. C. Rosenberger of the bacteriological Department of Jefferson Medical College cultured cigars purchased from twenty-eight cigar stores in Philadelphia using the mouth end of the cigar and sometimes portions of the interior of the cigar. In all 118 cigars were studied, in each an abundant growth of bacteria was obtained of many varieties but in no instance was Dr. Rosenberger able to demonstrate any virulent pathogen of pyogenic organisms. But from the frequent occurrence of staphylococci it seemed probable that in some factories moistening of the end with the mouth or tongue or twisting the end with the moistened fingers was practiced; this was observed in the cheaper cigars. The conclusion was that greater danger existed in the product of the smaller factories than in the larger.

THE TREATMENT OF SUPPURATING AND INFECTED WOUNDS

The treatment of infected wounds by the methods advocated by the Morrison and Moynihan are much discussed in the British Journals. Especially in the British Journal of Surgery. These experienced surgeons claim that their method brings better results than the methods advocated by Carrell and Dakin or by Wright. Both Moynihan and Morrison have published papers supported by numerous clinical cases showing their results. The eminence of these military surgeons together with their vast experience and opportunities must necessarily carry great weight. The method employed since the middle of 1916 is as follows:

1. Under an anesthetic, usually open ether, cover the wound with gauze wrung out of 1-20 carbolic acid, and clear the skin and the surrounding area with the same lotion.

2. Open the wound freely and, if possible, sufficiently to permit of inspection of its cavity. (In doing this special regard must be paid to nerve trunks and muscular branches of nerves, since the division of blood-vessels, excepting the largest, and of muscles themselves, does little harm as compared with that of the disability following nerve damage.) Cleanse the cavity with dry sterile gauze mops. Volkmann's spoon, etc., and remove all foreign bodies.

3. Mop the surrounding skin and the wound cavity with methylated spirit. Cotton-wool mops conveying the spirit are used for this purpose, and are introduced on forceps.

4. Fill up the whole wound with the paste. Bismuth iodoform paste (Bipp) is made by Sergt. Hunter as follows: Iodoform, 16 oz.; bismuth subnitrate, 8 oz.; liquid paraffin, 8 fl. oz., or a sufficient quantity. The powders are mixed together in a mortar, and the liquid paraffin incorporated. The quantity of liquid paraffin required varies according to the bulk of the powders, the bismuth in particular being liable to a considerable variation in bulk. A sufficient quantity should be added to form a paste. It is then advisable to rub down the paste, in small quantities at a time, on a slab with a spatula, to ensure freedom from grit and dry particles of powder. Dress the wound with sterile gauze and cover all with an absorbent pad, which is held in position by sticking-plaster and a bandage. This dressing requires no change for days or weeks if the patient is free from pain and constitutional disturbance. Should, however, discharge come through, the stained part must be soaked in spirit, and a gauze dressing wrung out of the same applied as a further covering.

Re-dressing is very simply done. After removal of the old dressings the wound is covered with a dossil of wool soaked in spirit, and the sticky, dirty-looking discharge is wiped off the surrounding skin until it is clean. This is done with dossils of cotton-wool soaked in spirit and applied by forceps.

THE LABORATORY THAT KNOWS HOW

The Cutter Laboratory, of Berkeley, Calif., has for twenty years been serving the physicians of the country; but in order to better meet the requirements of the profession, they have re-organized and enlarged their Chicago office, and are better prepared than ever before to serve the interests of our readers. Accordingly this Journal has accepted their page announcement and is printing that announcement in this issue. If you find their service available for your practice, we bespeak for the Cutter Laboratory a share of your patronage.

COMING MEETINGS

PROGRAM OF ANNUAL MEETING OF TRI-STATE DISTRICT MEDICAL SOCIETY, MADISON, WISCONSIN

The Tri-State Medical Society extends to the physicians of Wisconsin, Iowa, and Illinois a hearty invitation to be present at its annual scientific, clinical and social meeting to be held in the state capitol building (assembly chamber) Madison, Wisconsin, August 19, 20, 21 and 22.

A large portion of the time of this year's meeting will be taken up with subjects pertaining to the medical phase of the war.

Surgeon General William C. Gorgas of the United States Army has conferred a great favor upon the society by agreeing to be present, if possible. The society is also very fortunate in having upon its program Major Hubert Work and Colonel Easby-Smith along with the medical aides, Drs. Rock Sleyster, of Waupun, John M. Dodson of Chicago, and W. W. Pearson of Des Moines, who will have charge of a conference of exemption boards to be held on the second day of the meeting. We feel deeply grateful to Provost Marshall General Enoch H. Crowder for designating Major Work and Colonel Easby-Smith to represent the Provost Marshall General's office.

First Day—August 19

10 to 12 a. m.—Registration in lobby of assembly chamber, state capitol.

12:30 to 2 p. m.—Luncheon in capitol cafe—under the dome.

2:00 to 5:00 p. m.—Visits through state house, university and other points of interest. Golf at Maple Bluff Golf Club. Golfers bring your instruments.

8:30 p. m.—Take boats at foot of S. Carroll street, two blocks below Park Hotel, for Esther Beach. Dancing in open air pavilion.

Second Day—August 20

7:00 a. m. Diagnostic Clinic (surgical)—Major Joseph Colt Bloodgood, Professor of Surgery, Johns Hopkins University, Baltimore.

9:00 a. m. Address of Welcome—Mayor J. C. Sayle.

9:30 a. m. Response to Address of Welcome—Dr. J. H. Guthrie, Honorary President Tri-State District Medical Society, Dubuque.

9:50 a. m. Diagnosis of Cardiac Conditions from the Standpoint of Military Service—Dr. J. S. Evans, Madison, Wis.

10:00 a. m. Syphilis of the Thyroid Gland with a Review of Recent Literature—Dr. Don Deal, Springfield, Ill.

10:30 a. m. The Thyroid Gland, Its Functions and Diseases—Dr. W. J. Herrick, Ottumwa, Iowa. Discussion: Dr. A. M. Miller, Danville, Ill.

10:50 a. m. A Study of One Thousand Cases Operated upon for Goiter—Dr. E. P. Sloan, Bloomington, Ill. Discussion: Dr. R. J. Jackson, La Crosse, Wis.

11:10 a. m. Address in Obstetrics—Dr. Edward Davis, Professor of Obstetrics, Jefferson Medical College, Philadelphia. Subject: Obstetrics.

Afternoon Session

1:15 p. m. The Feeding of Babies with Reference to Abnormal Bowel Movements—Dr. John W. Vanderslice, Oak Park, Ill.

1:35 p. m. Trachoma and its Relation to the General Practitioner—Dr. Corydon G. Dwight, Madison, Wisconsin. (Lantern slides.) Discussion: Dr. Frederick A. Davis, Madison, Wis.

1:55 p. m. Address in Children's Diseases—Dr. Charles Kerley, Professor of Pediatrics. New York Post Graduate School, New York City, New York. Subject: Gastro-Intestinal Disorders Dependent upon Mechanical Agencies in Children. (Lantern slides.)

2:55 p. m. Our Duty to the Registrants—Dr. W. L. Allen, Davenport, Iowa.

3:15 p. m. Conference of Local, District and Medical Advisory Boards. In regard to the selective service regulations, in charge of Major Hubert Work and Colonel Easby-Smith of Provost Marshal General's office, Washington, D. C. Together with Medical Aids, Rock Sleyster of Waupun, John M. Dobson, of Chicago, and W. W. Pearson, of Des Moines.

1:00 p. m. Ladies Entertainment—Progressive Luncheon. Ladies will meet at the Rotunda of the capitol.

7:30 p. m. Orpheum party.

Evening Session

7:00 p. m. The Surgery of the Gall-Bladder and Ducts—Dr. James N. Neff, Chicago, Ill. Discussion: Dr. Jos. Dean, Madison, Wis.

7:30 p. m. Fractures of the Extremities—Dr. P. A. Bendixen, Davenport, Iowa. Discussion: Dr. C. W. Hopkins, Chief Surgeon N. W. Railway, Chicago, Ill.

7:50 p. m. Address of Surgery—Dr. Benjamin Davis, Chicago. Subject: Blastomyeosis (lantern slides).

8:35 p. m. The Roentgen Diagnosis of Gastro-Intestinal Lesions of the Upper Right Quadrant, Lantern Slides of Ulcers Under Medical Management; Mistakes in Diagnosis—Dr. J. W. Rountree, Waterloo, Iowa. Discussion: Dr. Charles R. Rardeen, Madison, Wis.

8:55 p. m. Address in Surgery—Dr. J. Rawson Pennington, Professor of Proctology, Illinois Post Graduate School, Chicago. Subject: A Consideration of the Carrel-Dakin Method of Treating Wounds and the Paraffin Wax Treatment of Burns (lantern slides).

9:40 p. m. Radium as an Aid to the Surgeon—Dr. C. W. Hanford, Chicago, Ill. Discussion: Dr. W. E. Bannen, La Crosse, Wis.

Third Day, August 21—Morning Session

7:00 a. m. Diagnostic Surgical Clinic—Major John B. Deaver, Professor of Surgery, University of

Pennsylvania, Philadelphia. Pediatric Clinic—Dr. Charles Kerley, Professor of Pediatrics, New York Post Graduate School, New York City.

9:00 a. m. Vomiting Conditions—Dr. Paul E. Gardner, New Hampton, Iowa.

9:20 a. m. Practical Ideas Regarding the Treatment of Acidosis, Commonly Called Uremia—Dr. J. H. Stealy, Freeport, Ill.

9:40 a. m. To Mendota by boat or cars.

10:20 a. m. Psychiatry and the War—Dr. Arthur W. Rogers, Oconomowoc, Wis.

10:40 a. m. Delusions, Illusions, and Hallucinations of Exceptional Character Found in a Series of Psychoses—Dr. Richard Dewey, Wauwatosa, Wis.

11:00 a. m. Clinic—Mental Diseases. Address in Mental Disease. Dr. Charles W. Burr, Professor of Mental Diseases, University of Pennsylvania, Philadelphia. Subject: The Relation of the Ductless Glands to Mental Function.

12:30 p. m. Luncheon at Mendota State Hospital.

Afternoon Session

1:45 p. m. Abdominal Emergencies—Dr. D. J. Twohig, Fond du lac, Wis. Discussion: Dr. Gilbert Stannard, Sheboygan, Wis.

2:05 p. m. Sarcoma: Report of Three Cases—Dr. J. H. Guthrie, Dubuque, Iowa. Discussion: Dr. W. T. Sarles, Sparta, Wis.

2:25 p. m. Address in Surgery—Major Joseph Colt Bloodgood, Professor of Surgery, Johns Hopkins University, Baltimore.

3:25 p. m. The Bacteriology of Some of the Acute Infectious Diseases—Dr. W. D. Stovall, Madison, Wis. Discussion: Dr. Sheldon Clark.

3:45 p. m. Ureteral Calculi—Dr. William Jepson, Sioux City, Iowa. Discussion: Dr. P. L. Markley, Rockford, Ill.

4:05 p. m. Address in Medicine—Dr. Howard Fussell, Professor of Applied Therapeutics, University of Pennsylvania, Philadelphia. Subject: Necessity and Practicability of Laboratory Work in the Practice of the Family Physician.

3:30 to 5:00 p. m. Automobile Tour of the City for Ladies. Assemble at New Park Hotel. Tea at Country Club.

Evening Session

7:00 p. m. Skin Grafting—Dr. John F. Pember, Janesville, Wis.; Dr. T. W. Nuzum, Janesville, Wis. Discussion: Dr. Karl W. Doege, Marshfield, Wis.

7:20 p. m. Paper—Dr. Carl E. Black, Jacksonville, Ill.

7:40 p. m. Address in Surgery—Major Fred H. Albee, Professor of Orthopedic Surgery, New York Post Graduate School, New York City. Subject: Reconstruction Military Surgery. (Moving pictures and lantern slides.)

9:00 p. m. Address in Surgery—Dr. William Lower, Associate Professor of Surgery, Western Reserve University, Cleveland, Ohio.

10:00 p. m. Smoker at Madison Club, with entertainment features.

Fourth Day, August 22—Morning Session

7:00 a. m. Diagnostic Surgical Clinic—Dr. Austin Flint, Professor of Obstetrics and Clinical Professor of Gynecology, University and Bellevue Hospital Medical College, New York City. Medical, Dr. Howard Fussell, Professor of Applied Therapeutics, University of Pennsylvania, Philadelphia.

9:00 a. m. Thrombosis from Contusion of the Arteries of the Lower Extremities—Dr. David Fairchild, Clinton, Iowa. Discussion: Dr. J. F. Smith, Wausau, Wis.

9:20 a. m. The Regimental Surgeon—Major R. C. Bourland, Rockford, Ill.

9:40 a. m. Address upon Medical Questions of the Day—Dr. Alexander Craig, Secretary American Medical Association, Chicago, Ill.

10:20 a. m. Paper—Major J. C. Dallenbach, Designated by Camp Robinson, Wis.

10:40 a. m. The Principles Which Must Govern the Plastic, Facial and Oral Restorations for War Injuries—Dr. Geo. V. I. Brown, Milwaukee, Wis. Discussion: Dr. D. D. Culver, Aurora, Ill.

11:00 a. m. Address in Gynecology—Dr. Austin Flint, Professor of Obstetrics and Clinical Professor of Gynecology, University and Bellevue Hospital Medical College, New York City. Subject: A Contract Between the Radical and Conservative Methods of Treatment of Eclamptic Conditions.

Ladies boat ride and luncheon.

Afternoon Session

1:00 p. m. Military Subject—Major W. G. Alexander, Designated by Camp Dodge, Iowa.

1:20 p. m. Duties of the Medical Officer—Major Harry S. Gradle, Designated by Camp Grant, Ill.

1:40 p. m. Address—Surgeon General William C. Gorgas, Washington, D. C.

2:40 p. m. Address—Colonel Frank Billings, Chicago.

3:40 p. m. Address—Major John B. Deaver, Philadelphia.

4:40 p. m. Address—Major L. L. McArthur, Chicago.

7:00 p. m. Banquet for doctors and their ladies, Lathrop Hall.

Evening Session

6:30 p. m. Banquet for doctors, ladies and invited guests. Toastmaster, Judge J. B. Winslow, Chief Justice of the Wisconsin Supreme Court.

Addresses

Gov. E. L. Philipp, of Wisconsin; William C. Gorgas, Surgeon General, United States Army; guests of the association. Dr. Gustave Windesheim, President Wisconsin Medical Society; Dr. Max E. Witte, President Iowa Medical Society; Dr. Edward Fiegenbaum, President Illinois Medical Society.

William B. Peck, President,
Freeport, Ill.

Nelson C. Phillips, Secretary,
Freeport, Ill.

AUGUST MEETING SOUTHWESTERN IOWA MEDICAL SOCIETY

The August meeting of the Southwestern Iowa Medical Society will be held at Shenandoah, August 29, the program opening at 9:30 a. m. with the reading of the minutes.

Table Round—The Physician in His Relation to War Activities—Discussion to be opened by Dr. D. C. Brockman, Ottumwa.

Election of officers.

Dinner.

President's Address—Dr. J. C. Ohlmacher, Clarinda.

Anesthetics—Dr. J. H. Goad, Afton.

Paper—Dr. Fred Bowman, Leon.

Acute Enteritis in Children—Dr. Edward Luke, Coin. Discussion opened by Dr. G. L. Armitage, Murray.

The Decatur County Method of Examining Registrants—Dr. B. L. Eiker, Leon.

Differentiation between Benign and Malignant Tumors of the Female Breast—Dr. John E. Summers, Omaha. Discussion opened by Dr. F. E. Sampson, Creston.

Prostatic Hypertrophy—Dr. E. E. Bamford, Centerville. Discussion opened by Dr. B. L. Eiker, Leon.

Aids to Efficient Work in Surgery—Dr. B. B. Davis, Omaha.

SOCIETY PROCEEDINGS

Twenty members of the Clinton County Medical Society held a special meeting at the George Schwert cabin at Camanche late yesterday afternoon. The physicians were served a Dutch lunch followed by a meeting at which Lieutenant McLaughlin, of the United States Army, who is now in charge of the social disease to the physicians on the law, making it compulsory for all physicians to report such cases and on the fact that Clinton will soon have a hospital to intern all of the people suffering with this disease. Following the lecture, a general discussion was held.

The Dubuque County Medical Society held its thirtieth special program meeting June 20, at the Elks Club, Dubuque.

Dr. Wm. F. Braasch, of Rochester, read a paper on Certain Phases of Renal Tuberculosis; Dr. Arthur Steindler, Iowa City, presented a paper on Orthopedic Surgery of the Hand.

Major Wm. G. Alexander, Camp Dodge, read a paper on The Use of the X-Ray in Pneumonia, in which he emphasized the following points: Proper attitude of the medical profession towards the x-ray in diagnosis of lung diseases; methods employed in the hospital for these pictures; co-ordination of all departments to give the greatest efficiency. Lantern slides to illustrate the ways in which x-ray may be most helpful in pneumonia, namely: early diagnosis

of pneumonia; early diagnosis of empyema and its location; early diagnosis of pericarditis; extent of changes in pneumonia following resection; question of complete resolution; localized bronchopneumonia.

JOHNSON COUNTY MEDICAL SOCIETY

Dr. C. P. Howard, Pres., Dr. L. W. Littig, Sec'y

The first paper by Dr. N. G. Alcock on Stone in the Kidney and Ureter with lantern slides contained many points of practical interest and showed the difficulties in accurate diagnosis, so important in determining the safest and best course of procedure.

Major Miller, of Camp Dodge, addressed the society on important questions relating to the diagnosis and treatment of pneumonia with pleuritic complications with lantern slides.

Dr. D. S. Fairchild, of Clinton, read a paper on Traumatic Thrombosis in Injuries of the Lower Extremities. Major Alexander, of Camp Dodge, made a stirring appeal to the profession on the necessity of freer enlistment in the Medical Reserve Corps to meet the pressing needs of the Army and Navy.

This was the mid-summer meeting and was held in the ball room of the Reichardt pavilion, city park. According to program the society adjourned for a buffet lunch served by the doctors' wives to the pleasure and great enjoyment of the convention. Our lamented friend Dr. L. W. Littig so often the leader on such occasions suffering the inception of the fatal infection almost immediately afterward.

The Monona County Medical Society held a meeting in the early part of May to consider the question of a substantial increase in fee bill particularly in the mileage for country calls and in obstetrics. The increase was adopted.

Dr. F. S. Spearman and Dr. G. C. Waterhouse enlisted in the Medical Reserve Corps but failed in the physical examinations.

The Plymouth County Medical Society held its regular meeting at Le Mars, August 6, when the following program was carried out:

Acute Lobar Pneumonia, W. T. Shepard, Le Mars; Anaphylaxis, W. J. Brunner, Akron; Morals and Manners, A. H. Jastram, Remsen.

The Story County Medical Society held its regular meeting at Mary Greeley Hospital, Ames, July 9. A six-thirty dinner was given at the hospital with the Ames physicians as hosts.

Dr. W. L. Bierring, of Des Moines, who was the guest of the society, gave a very interesting talk on Hospitals, Their Use in a Community and Their Equipment. Dr. F. S. Smith, of Nevada, read a paper on Vacation Problems, something away from medicine, but enjoyed by all. Dr. Hans Haeren, read a paper on Surgical Fads, which made a fitting close for the program.

A large representation of the membership was

present and the meeting was a success in every way.

B. H.

It may be of interest to the profession to know that 100 per cent. of the doctors in Webster county, within the age limit and physically qualified, are now in active military service. Certainly no city can show better records than this and the profession of Webster county is to be complimented on the patriotic sentiment that prevails in that county.

The forty-seventh annual meeting of the Des Moines Valley Medical Association was held at the court house assembly room, Ottumwa, June 27.

Major E. T. Edgerly, and Captain Donald McElderry, both of Ottumwa, who were home on a leave of absence, contributed interest to the program. Capt. McElderry read a paper on The Work of the Army in the Medical Corps. Major Edgerly who is stationed at Camp Dodge gave an inspiring address on the work in camp and the opportunities for medical men. Officers elected for the ensuing year were: President, S. K. Davis, Libertyville; first vice-president, M. F. Moore, Ottumwa; second vice-president, T. P. Jackson, Albia.

ANNUAL MID-SUMMER MEETING AUSTIN
FLINT-CEDAR VALLEY MEDICAL SOCIETY, HELD AT MASON CITY,
JULY 9, 10

The annual mid-summer meeting of the Austin Flint-Cedar Valley Medical Society was called to order by the president, Dr. L. C. Kern, of Waverly, July 9 at 2:00 p. m. in the Chamber of Commerce rooms at Mason City.

After the reading and approval of the minutes of the previous meeting, the scientific program was opened by Dr. Tom B. Throckmorton, Des Moines, who read a very interesting paper on Paranoia with Special Reference to the Paranoid Tendencies of the Kaiser, which was discussed by Drs. Ely, Babcock, Chase, W. A. Rohlf, and J. C. Wright. Dr. Throckmorton closing the discussion.

The Medical Treatment of Goiter, was presented in a paper by Dr. Granville N. Ryan, of Des Moines; paper discussed by Drs. Chase, Ely, Dakin, and Kern, with closing remarks by the essayist.

Dr. J. C. Rockafellow, Des Moines, read a paper on The Effect of Syphilis on the Repair of Wounds. This practical paper was discussed by Drs. Ryan, Throckmorton, and Chase, with closing remarks by Dr. Rockafellow.

With Vice-President Dr. C. E. Dakin in the chair, President L. C. Kern read his address on the timely subject of The Nursing Question as Affected by the Present Day Needs of the Army, the Hospital and the Home. Dr. Kern covered the subject very thoroughly and practically, offering some suggestions as to the training of nurses to meet the exigencies of these trying times. In closing Dr. Kern suggested that his paper be discussed freely, the same as any

other paper at the meeting. Suffice to say that this request on the part of the president brought forth several patriotic speeches by the members present.

The second day's meeting, July 10, was called to order by President L. C. Kern at 9:40 a. m. The first paper on program was read by Dr. H. C. Jungblut, of Tripoli, on The Significance of Abdominal Pain, with discussions by Drs. Kenefick, Ely, Wray, and Ross.

Dr. C. S. Chase, of Iowa City, gave a very interesting talk on The New Pharmacology which was followed by discussions and questions from several members. Dr. Chase closing the discussion.

Dr. J. F. Studebaker, of Fort Dodge, presented a paper on Diagnosis of Stomach Diseases.

Owing to the lateness of the hour, discussion of Dr. Studebaker's excellent paper was dispensed with.

The officers elected for the coming year, the secretary casting an affirmative ballot for the society in each instance were: President, C. E. Dakin, Mason City; vice-president, O. M. Landon, New Hampton; secretary, W. E. Day, Clarksville; treasurer, J. G. Evans, New Hartford; member board of censors, L. C. Kern, Waverly. The following applicants were elected to membership: F. J. Epeneter, Tripoli; J. W. Rountree, Waterloo; Caryl L. Nelson, Waterloo, and M. M. Ghent, St. Paul.

The afternoon session was called to order at 1:45 p. m. by the president. Dr. C. H. Graening, of Waverly, read a paper entitled Surgery from a Non-Surgical Standpoint, discussed by Drs. Jungblut, Kenefick, Osborn, Rohlf, Landon, Clark, Gardner and Babcock, Dr. Graening closing the discussion.

Dr. F. H. Cutler, of Cedar Falls, read a paper entitled Some Results Obtained during Twenty-two Years in the Treatment of Cancer by X-Rays. Discussion by Drs. Rohlf, Ross, Babcock, Clark, and Kenefick, with closing remarks by the essayist.

Dr. C. N. Freligh, of New Hampton, presented a paper on Perthis' Disease, which was discussed by Drs. Wray, Long and closing remarks by the author.

Dr. W. H. Ross, of Waterloo, read a paper on the Treatment of Tuberculosis, Based upon its Clinical Cause. The paper was discussed by Drs. Scarborough, Kern, Long, Babcock, Graening, and Ross.

Dr. V. A. Farrell, of Mason City, read a paper on Pain in Gastric Ulcer, followed by discussion by Drs. Clark, Long, Dakin, and Farrell.

This very successful meeting closed by adjournment to meet in Algona in November.

The social part of the meeting consisted of a banquet held on the evening of the first day at The Oaks Hotel, Clear Lake, one of the best banquets ever given by the society. Dr. F. T. Scanlon of Clear Lake acting as toastmaster, the following responded to toasts: Dr. C. S. Chase, Iowa City; Dr. A. Babcock, New Hampton; Dr. O. P. Thompson, Waterloo; Dr. W. A. Rohlf, Waverly, and Mrs. A. Babcock, New Hampton. Readings and music added to the enjoyment of the occasion.

A. D. McKinley, Sec'y.

IOWA AND ILLINOIS DISTRICT ASSOCIATION

This association held its annual meeting at the Outing Club in Davenport, July 11, 1918 at 2 p. m.

Papers were read by Drs. W. H. Rendleman, of Davenport; Granville Ryan, Des Moines; N. G. Alcock, Iowa City; C. A. Hedblom, of Rochester, and Mr. A. D. Howard, U. S. Biological Station, Fairport.

The meeting was opened by a short address by the president, Dr. Louis Ostrom, of Rock Island who then introduced Professor Dodson of the University of Chicago and a member of the Advisory Medical Board of Chicago who considered the duties of the examiners of exemption boards and pointed out the care which should be observed by examiners in providing fit men for the service. Many other things relating to military service were touched upon in an optimistic manner after which the Doctor admitted that he was an amateur in military affairs which we believe was quite true. Dr. C. A. Hedblom of the Mayo Clinic read a very interesting paper on The Present Status of the Treatment of Empyemia in which he presented an outline of the different methods of treatment, showing that no treatment yet devised was ideal but that the fundamental fact in recent cases was thorough drainage. It was shown that in war empyemia a special line of treatment was receiving considerable attention. Mr. A. D. Howard gave an interesting talk on the work at the U. S. Biological at Fairport and on the button industry at Muscatine.

The association was informed of the serious condition of the Secretary Dr. L. W. Littig, of Iowa City, and resolutions of sympathy were adopted. Little was thought at the moment that in a few days the wires would send out the message that Dr. Littig was dead.

MARRIAGES

Lieut. Love E. Pennington, M. R. C., U. S. A., Cherokee, on duty at Camp Dodge, to Miss Veronica Murphy, of Iowa City, at Iowa City, July 6.

Lieut. Robert M. Cullison, M. R. C., U. S. A., Montezuma, on duty at Fort Sam Houston, to Miss Clara Feldham, of Hartley, at Des Moines, July 5.

BIRTHS

Dr. and Mrs. Wm. C. Kennedy, of Knierim, a son.

Dr. and Mrs. Mixie Cunningham, of Oakdale, June 15, a son.

Major and Mrs. T. A. Burcham, of Des Moines, July 19, a daughter.

Dr. and Mrs. I. O. Pond, of Perry, July 10, a daughter.

DEATHS

John Calvin Williams, M.D., aged seventy-three; State University of Iowa College of Medicine, 1888;

Fellow of American Medical Association; Member of Iowa State and Keokuk County Medical Societies; a veteran of the Civil War; a practitioner for over forty years at What Cheer, Keokuk county; died at the Mahaska County Hospital, Oskaloosa, July 7.

Benjamin F. Bailey, M.D., aged eighty-one; Cleveland Homeopathic Medical College, 1860; died at his home in Keokuk from senile debility, June 27.

Frank E. Whitley, M.D., aged sixty-one; Rush Medical College, 1881; Fellow of American Medical Association, Member of Iowa State and Hamilton County Medical Societies; a practitioner at Webster City for thirty-five years; died at the home of his daughter, Mrs. Max Hemmingway, Fort Dodge, from heat prostration, July 26.

MEDICAL NEWS

Word has been received of the safe arrival of Capt. Ward Hanna, of Webster City, "over seas."

Dr. W. L. Bierring, of Des Moines, has been re-elected president of the State Board of Health.

Capt. Chas. E. Riggs, surgeon-in-chief of the Asiatic fleet, which sailed from Vladivostok, May 29, has arrived in Iowa City for a short stay at home, awaiting further orders from the government.

Capt. D. J. McCarthy, of Davenport, who spent several months in the Red Cross Hospital at Jassy, Roumania, has returned to Davenport. The doctors and nurses were compelled to leave Jassy after Roumania's withdrawal from the war.

Lieut. Richard Ristine, son of Dr. and Mrs. J. M. Ristine, of Cedar Rapids, who enlisted in the aviation service, met his death at Grestner Field, Lake Charles, La., July 24 when an airplane in which he was a passenger fell in a "tail spin," from a height of 300 feet.

Dr. George Braunlich, for the past year pathologist at Mercy Hospital, Davenport, was tendered a farewell dinner at the Blackhawk Watch Tower Inn, July 22. Twenty of the Davenport physicians were present and as a farewell remembrance presented their guest with a soldier's kit. Dr. Braunlich is one of the newer members of the profession in Davenport. He graduated from Johns Hopkins in 1915, served a year in the New Haven Hospital, joined the Connecticut National Guards and commissioned first lieutenant going to Nogalis, Arizona; his company was mustered out of service November 8, 1916. Dr. Braunlich located at Davenport where he was in general practice for six months when he took charge of the Mercy Hospital laboratory as pathologist and bacteriologist, relieving Dr. F. H. Lamb who entered the service. Dr. Braunlich endeavored to get into the regular army but was rejected on account of being underweight; but lately was re-examined and accepted, receiving a commission as first lieutenant. Dr. Braunlich has been ordered to report at Camp McArthur, Waco, Texas.

*Our facilities make us
headquarters for the
Organotherapeutic Agents*



The Best costs no more than—

The physician will be pleased to learn that his patient can now get Armour's Corpus Luteum, Powder, 2- and 5-grain capsules and 2-grain tablets, at a reduction of approximately 33⅓% from former prices.

Corpus Luteum (Armour) is the true substance made from material selected in our own abattoirs, and will give results.

Armour's Surgical Catgut Ligatures

are smooth, strong and sterile. Sizes 000 to No. 6 inclusive. Plain and Chromic, 5-foot lengths. Emergency (20-inch lengths).

Pituitary Liquid (Armour), ½cc and 1 cc ampoules, is free from preservatives. ½cc obstetrical, 1 cc surgical.

ARMOUR AND COMPANY
CHICAGO

2415

Take Advantage of Our OCULIST CO-OPERATIVE POLICY

A Combination of

**"SELF-RITE" and "EVER-LOCT" MOUNTINGS
ACCURATE, PROMPT PRESCRIPTION SERVICE**

And a policy of distribution, which has been the means of our rapidly becoming the oculist's favorite prescription house.

Write for particulars

UHLEMANN OPTICAL COMPANY

Mallers Building

5 S. Wabash Ave.

CHICAGO

SOME FACTS ABOUT YEAST

The subject of yeast is of importance because, first, as has been pointed out in an editorial article in the *Journal of the American Medical Association* (*Jr. Am. M. Asso.*, 1916, lxiv, 1390) it possesses a distinct nutritive value, and because, secondly, it possesses therapeutic qualities. It is about some of the forms of yeast and their therapeutic properties that we wish to write. The matter of yeast treatment has recently received impetus as the result of the publication in the *Jr. Am. M. Asso.* (Oct. 13, 1917) of an article by Dr. Philip B. Hawk and collaborators, which represents work done in the Laboratory of Physiological Chemistry of the Jefferson Medical College, and the Philadelphia General Hospital, both of Philadelphia, and the Roosevelt Hospital, New York.

Hawk and his colleagues obtained strikingly good results from the use of yeast in many pathological conditions, especially the purulent skin conditions such as acne and furunculosis and in constipation. That they did so is not at all surprising, for yeast has always acted well in these skin conditions, as is well known. Hawk mentions that yeast has been used in medicine since the days of Hippocrates (who used it in the treatment of leucorrhoea); not, however, until the middle of the nineteenth century, was its use looked on favorably by the medical profession. Since then, its value has been attested by numerous observers, who have employed it in a variety of pathological conditions. Its value in certain skin conditions has been freely acknowledged by dermatologists—for instance, Schamberg has seen good results from its use in the treatment of ordinary furunculosis (*Diseases of the Skin and the Eruptive Fevers*, 1915) although it failed him in the furunculosis accompanying small-pox.

Hawk's researches are novel in that he employed as a therapeutic agent not the time-honored brewers' yeast, but the familiar Fleischmann's yeast of the bakeries and the household. This is the first time, it seems, that bakers' yeast has been employed systematically as a therapeutic agent, although Louvel (*Reves med.*, 1905-6,—fasc. 10, 16-19) seems to have used it in the treatment of sundry infectious diseases, and according to Cailliau (*These de Paris*, 1908) it was used in 1896 by De Backer, who mixed it with equal parts by weight of white honey, and who, having used it thus in the treatment of furunculosis, considered that it was more active and better supported than ordinary yeast.

That brewers' yeast should have been used in the past is not at all surprising when we call to mind that, in all probability, in modern times at least, it was extensively used and tested by the employes of breweries, who found it readily accessible. A special virtue seems to have attached to brewers' yeast, probably from this reason. For instance, the yeast specified by Schamberg (*loc. cit.*) is fresh brewers' yeast, and the U. S. Pharmacopoeia of 1876 defines yeast (*fermentum*) as "a peculiar insoluble product of the

fermentation of malt liquors." It was dropped from the Pharmacopoeia of 1880, and has since remained unofficial. The U. S. Dispensatory (Remington and Wood) of 1918, describes it as a "flocculent, frothy, somewhat viscid semi-fluid of a dirty yellowish color, a sour vinous odor and a bitter taste." Suffice it to say, the appearance of brewers' yeast is not at all familiar to very many physicians, one reason being that it is not immediately available, except in some large cities. In country districts that are remote from breweries, the use of brewers' yeast is attended with serious difficulties.

Compressed yeast, the undried product, is readily obtained and there is no reason why it should not be largely used.

The National Formulary, 1916, under the term "*Cerevisiae Fermentum Compressum*" recognizes compressed yeast and describes it as follows: "The moist, living cells of *Saccharomyces cerevisiae* Meyen (Fam. *Sacchyromycetaceae*) or of other species of *Saccharomyces*, combined with a starchy or absorbent base. White or yellowish-white, soft, and easily broken masses, having a characteristic slightly sour odor, and not more than a faintly acid reaction to litmus. When examined under the microscope, numerous oidium and mycoderma cells and starch grains are visible. Compressed yeast must not be used unless fresh, and free from mildew and musty odors." Sadtler (*Industrial Organic Chemistry* 1900) has also given a good description of compressed yeast: "It should be only slightly moist, not sloppy to the touch; the color should be a creamy white; when broken it should show a fine fracture; when placed upon the tongue it should melt readily in the mouth. It should have an odor of apples, not like that of cheese; neither should it have an acid taste or odor. * * *

A certain disadvantage of fresh brewers' yeast in therapeutics has been mentioned, i. e., its non-availability. Certain other objections to its use readily come to mind, among them being the fact that as a rule it is decidedly non-uniform both as to composition and as to action. We would readily suspect this when we recollect that in the yeast of the breweries two well-marked varieties of *saccharomyces* have been recognized; a top yeast most active at 16°-20° C. and a bottom yeast most active at 6°-8° C. On the different behavior of these varieties, different methods of brewing have been founded. Lardier (*These de Paris* 1901-1902) calls attention to the fact that brewers' yeasts obtained from different breweries behave differently so far as therapeutic action is concerned; moreover, that the therapeutic action of yeasts obtained from different barrels in the same brewery varies. Also the yeast in the same barrel varies at different stages of fermentation. He states that the difference explains in part the varying therapeutic results of different observers.

Besides varying in proportions of the different species of *saccharomyces* they contain, brewers' yeasts are apt to be admixed with various wild yeasts that enter the liquid from the air.

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, SEPTEMBER 15, 1918

No. 9

ORATION IN MEDICINE

WM. L. ALLEN, M.D., F.A.C.S., Davenport

Plato wrote, "And I said of medicine that this is an art which considers the constitution of the patient and has principles of action and reasons in each case." Plato must have had a prophetic vision, and looked ahead more than 2000 years, for it is only within the last forty years that we could truthfully say that we had "principles of action and reasons in each case."

The greatest bank in the United States in its April bulletin writes, "*Without the character to fight for ideals there is no foundation for success of any kind.*"

The progress of medicine has been one continuous battle for ideals, with our great men appearing from time to time like beacon lights, their standing among their colleagues, so great as to make them appear to us today, as we look back at their wonderful exploits, like great generals with an army poorly prepared, without guns or ammunition or aeroplanes.

We wonder at the skill of Hippocrates, who more than 2300 years ago, with no knowledge of the circulation of the blood or of antiseptics or of anesthetics, could nevertheless perform many of the most serious operations of the present day, and had the skill and the nerve to explore the ventricles of the brain. Only last year this practice was repeated by Verbizier and Chauvel, who injected serum into the ventricles in two cases of meningitis.

To medicine was due the discovery of electricity, and many of the elements and the wonders of microscopic anatomy, and all the knowledge of diseases made possible by the use of the microscope.

The new world opened up by the bacteriologists changed the entire life of the practitioner of medicine; their discoveries let in a light so dazzling that the doubtful days of symptomatic and expectant treatment were cleared away, and one could proceed in a very wide field as Plato prophesied, with "principles of action and rea-

sons in each case." Those of you who remember the awful days and nights when we treated diphtheria expectantly, before the blessings of *antitoxin* were known, will feel as I do, that no crown of glory can be too great for those who gave us that great cure.

The work of the followers of Pasteur and Koch and Ross, with the sacrifice of Reed and Carroll and Lazear, who went to bed with mosquitoes carrying the blood of yellow fever victims, to test their theories, and gave up their lives that we might be saved, is an example of "character to fight for ideals," unparalleled in all history. The sacrifice which these brave men made will save thousands of lives annually for all time to come, while the best even the most skillful of us can do, is to save a few lives during our short career.

At no time in the history of medicine has our profession had more cause for congratulation and thanksgiving, than in the fact that in the present fearful crisis, the greatest war in history, we should have at the head of our Army as Surgeon General, the one man in all the world best fitted to prevent disease, and save the lives of our brave American soldiers. That such a man as General Gorgas, after all that he accomplished in Panama, after giving up all thought of self, and undertaking to save the people in South America and Africa from disease, should be spared to us at the greatest crisis in our country's history, so that we might have at least *one* department prepared for war and for the prevention of disease, seems Providential.

At no time has *medicine* been so well prepared to aid our Army as at present, the use of anti-typhoid and antitetanic serum has rendered these horrors of the Army absolutely negligible, the sanitation of camps and the care of food have greatly reduced the mortality rate. Surgery and medicine have been equal to every emergency. *Nevertheless* examinations in our camps have shown carriers of measles, pneumonia and meningitis in great number, and there have been many deaths for which *we at home* are partly to blame. Our

reports show 5,000 deaths have occurred due to measles-pneumonia and meningitis.

It has been said that the lack of detention hospitals to disclose possible contagion was the cause of a large part of this mortality, the introduction of measles which always spreads like a prairie fire, might have been prevented and the most fatal of all camp diseases this year, *i. e.*, "measles-pneumonia," avoided.

The great number of cases of pneumonia, exclusive of those due to measles, and of meningitis has been due in part to three causes; first to the lack of precaution in isolating carriers; second, to the lack of sufficient and proper clothing and the lack of adequate air space in tents or quarters; and third, to the lack of previous physical training in recruits who were subjected to more severe exercise in drills, etc., than they were physically able to stand. simple colds thus became deep seated, and the lowered resistance made infection more certain and more severe.

Moreover the large number of patients afflicted with venereal disease has been a matter of great concern. Russell reported last fall that of the first draft army there were 398 cases of venereal disease per 1000 men. The Surgeon General's office states that that is an exaggeration, it having been computed from the weekly average. The fact however remains, that the newly enlisted men and the drafted men were found to be very largely infected with venereal disease, even the recent weekly reports show more cases of venereal disease than the total number of *all* cases of pneumonia, measles, meningitis, dysentery, malaria, scarlet fever and diphtheria.

That the Army Medical Corps is handling these cases in the very best possible manner does not relieve us of the responsibility we have in taking care of these young men *before* they enter the camps.

Had we physicians done all that we should have done these young men would not have been germ carriers, and they would have been cured of venereal disease.

Had the state and government done its full duty these young men would have had sufficient athletic or *universal training* so they would not have succumbed to the first severe drill, and the first exposure in early rising; and there would have been observation hospitals to prevent the introduction of contagion.

Our examining boards have found a surprisingly large number of men with hernia, bad feet and bad teeth. Our surgeons and dentists have volunteered their services, and our hospitals have opened their doors in order to give these men

every advantage of modern skill so that these defects may be remedied.

On the other hand the more dangerous *carriers* of pneumonia, meningitis, measles and diphtheria are entirely overlooked, and thousands suffering from venereal disease are entirely neglected.

As proof of the failure of our profession to prevent disease among our drafted men let me give one weekly report of *new* cases each month since October, 1917, of our U. S. Regulars, National Guard and National Army.

	U. S. REG.			NATIONAL GUARD						
	Oct.	Nov.		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Pneumonia.....	6	24	..	30	92	323	251	225	92	111
Dysentery	4	5	..	49	2	2	2	1	1	0
Malaria	20	7	..	97	49	15	10	1	2	31
Venereal	214	351	..	660	615	345	326	435	351	366
Typhoid	0	0	..	4	2	0	0	0	0	0
Measles	88	145	..	263	990	838	182	128	56	366
Meningitis.....	2	3	..	10	3	21	28	22	9	4
Scarlet fever..	8	17	..	6	15	28	26	36	12	11

	NATIONAL ARMY						
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Pneumonia.....	50	78	216	314	233	255	280
Dysentery	8	2	0	2	3	3	1
Malaria	48	43	5	2	1	17	11
Venereal	1,689	1,085	568	592	547	909	1,936
Typhoid	2	5	0	1	0	0	0
Measles	104	786	1,764	755	341	273	317
Meningitis.....	3	22	71	60	23	13	18
Scarlet fever....	1	6	90	97	138	149	117

The October and November reports were based on estimates of 270,000 Regulars, 303,000 National Guards and 428,000 National Army men. After December, reports of our Regulars could not be used as they were made to include our army abroad, and could not state the number of men, for obvious reasons. Later on in March and April as new quotas were added to the National Army, venereal disease increased, while in the National Guard the disease has decreased. Some camps report only 5 or 6 per cent. venereal disease among the newly drafted white soldiers but with 20 per cent. among the colored.

Whether this is approximately correct or whether Major Russell's report is more accurate, is not important, as the fact remains that we have several hundred thousand venereally infected young men about to be called, and nearly one-fourth as many who are carriers of the contagion of measles, pneumonia and meningitis. It is the duty of our medical societies to organize the profession to inspect and treat these registrants, for only by organized effort can thoroughly efficient work be accomplished; individual effort, no matter how willing or skilled, cannot accomplish so great a task as we have before us.

Already 20,000 of our colleagues have enlisted in the medical corps, and General Gorgas will want 20,000 more for the new army, but we will still have 100,000 remaining which will be an ample number to carry on an efficient campaign if properly organized. The task is not a light one, for there are in Class One 2,000,000 men, and in addition thereto there will be 800,000 more to be registered next month. It should be our duty to see that all of these 2,800,000 men are examined as *carriers*, and also as to venereal disease, and if found infected in any way they should be properly *treated* and *cured*.

How most of these venereal cases are neglected can be seen, when in our board alone we found only 10 per cent. of those infected were being treated properly; the remaining 90 per cent. were being maltreated either by chiros, quacks or druggists.

At this time *the winning of this war* is our first object in life, there can be *nothing* more important, nothing so vital.

The curing of these 200,000 or 300,000 infected registrants who are soon to be drafted, means that at least ten more army divisions will be made efficient, and fit to fight in time to be of untold value.

To do this work will require that committees must be organized by the various medical societies to see that each county is visited, and volunteers procured who will inspect and treat all of these 2,800,000 registrants who may require treatment. Is there any work that our society can do which will help more effectually to win the war than this?

DR. SOLOMON STROUSE'S METHOD OF TREATING DROPSY*

M. H. THIELEN, M.D., Grundy Center

Our subject may be somewhat misleading, and perhaps we are doing Dr. Strouse an injustice, by quoting him as the author of a particular treatment of dropsy. The point we wish to establish is the fact, that Dr. Strouse has suggested and tested many diets, which are very beneficial and advantageous in the treatment of edema, which we so frequently meet in our general practice.

For our consideration, we will take up the treatment of the three chief classes of cases which produce dropsy, and which must be treated therapeutically, in order to obtain any relief. First, acute nephritis, in which the kidney tissue is dam-

aged by inflammation from bacterial or other poison, so that it is unable to perform its normal function, and thus cause a damming back into the body of the products of metabolism, which normally are excreted by the kidney. Since in many instances, little or no urine is passed in this disease, these products of metabolism are retained in the general circulation, and, as a result, dropsy develops. It has been generally accepted, that dropsy is due to the retention of salt or water, or both. We know that complete functional rest of the kidney is not possible, but also know that certain products of metabolism are more harmful than others, therefore, it is our duty to select those substances which are the least harmful.

We do not mean to establish the fact, that we can tell the substances which actually are detrimental to the kidneys, but we can in a large measure, prove the retention of certain substances. Dr. Strouse maintains that dropsy is due to salt and water retention, and these are food products, so food plays an important part in the management of these conditions, and the effort to secure a suitable diet in nephritis, either acute or chronic, is the most important element in its therapeutics. Dr. Strouse emphasizes the fact that food must be selected, that the end products of its metabolism are as far as possible "bland" substances with regard to the kidney tissue, and special attention must be given to nitrogen, salt, and water content. Milk has formed the basis of most diets for acute nephritis. First, because milk contains a small amount of salt; second, the protein element of milk is practically non-toxic; third, the water content can be exactly determined, and fourth, it is easily digested.

The greatest trouble with milk as an ideal food, is the fact, that too large amounts are needed to sustain nutrition without flooding the body with an excess of water. In the most acute stage of nephritis, Dr. Strouse, in order to obtain the best functional renal rest recommends nothing to eat, and to allow only water in limited amounts to enter the body. Plain or carbonated water by the mouth, ice pellets or even water by rectum are allowed; but the quantity allowed must be determined for the individual patient, by carefully balancing the amount of urine voided, and the extent of dropsy present.

If the kidneys are secreting any urine at all, somewhat more water should be allowed in twenty-four hours than is voided, because water in itself is a good diuretic, and helps to flush retained poisons through the kidneys. The intense thirst of this period may be satisfied by adding a little cream of tartar and lemon juice to the water. How long to maintain the patient merely

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 9, 10, 11, 1918.

on water will depend almost entirely on his reaction to treatment. If he is going to react at all, two or three days should be sufficient, and then milk can be given 20 to 30 oz., milk will furnish as much water as the body can well handle at this time, and the additional nourishment can be supplied by other non-irritating bland foods, provided of course, the patient is able to eat at all.

Dr. Strouse recommends such substances as the cereals, poor in salt, and protein, dry toast, potatoes, lactose, and if digestion is not too much impaired, saltless butter will add calories, and the citrous vegetables, well prepared seem to have a good effect.

Such a diet is called the salt free non-nitrogenous, and has a limited water content, and therefore, it combines the principles of the most accepted "diets." We will submit specimen menus of such diets as are used and recommended by Dr. Strouse. First, salt free diet of "Widal," 8:00 a. m., bread 60 gms., lamb chops 50 gms., butter 10 gms., rice 100 gms., and sugar 40 gms. Twelve m., bread 60 gms., roast beef 100 gms., butter 20 gms., beans 150 gms. Five p. m., bread 80 gms., butter 20 gms., chicken 50 gms.

The Halpin diet is a very popular one. Six a. m., milk 200 c.c. 8 a. m., bread 100 gms., butter 15 gms., 1 egg, milk 300 c.c. Ten a. m., bread 100 gms., milk 200 c.c. One p. m., bread 100 gms., butter 15 gms., 1 egg, milk 300 c.c. Four p. m., 2 eggs, milk 250 c.c. Seven p. m., bread 100 gms., butter 10 gms., 1 egg, milk 250 c.c.

These menus are practically salt free and satisfy the patient's hunger perfectly.

Dr. Strouse lays particular stress upon what is known as the "Karell Cure." I will give it in detail as he presents it.

This cure is usually begun by giving 3 to 6 oz. of milk three or four times a day. Gradually the amount given and the number of feedings is increased until the patient is getting about two quarts daily. The milk may be given plain, but is usually diluted with some alkaline mineral water or lime water. In summer, the milk is given at room temperature, and in winter, it must be warmed. If the stools remain solid after one week of strict milk diet, the amount given is to be increased to two quarts daily. If gastric disturbances and diarrhea result, it is certain that the milk is being improperly digested, and the amount should be temporarily decreased. If constipation results, this is a sign that the milk is agreeing, and is being well utilized by the individual, and laxatives and enemata may be used. This condition may also be overcome by diluting the morning portion of milk with small amount of coffee, and

by adding baked apples or prunes to the afternoon diet. If patients complain of thirst, feeding may be diluted with plain hot water, carbonated water or lime water. If the desire for food is too great to be withstood, herring or stale salt free bread in small amounts may be added and milk soup thickened with cereal may be given once a week. This method is usually followed for five or six weeks, and then a normal diet is gradually resumed, large quantities of milk still being taken.

In chronic nephritis where dropsy persists, Dr. Strouse avoids the increasing of salt and water, but allows the gradual addition of carbohydrates, fats, and even small amounts of protein for days before the dropsy disappears. He also attempts to classify chronic nephritis on a basis of function. He as well as many others have devised many schemes to discover in the individual patient just what his kidneys can do. He does not give much credit to these functional tests, yet he has prepared a very desirable test diet for chronic nephritis, especially adapted for cases where edema persists. We give it in detail.

Seven A. M.—Fruit juice, strained cereal with cream, cocoa, toast and butter. Twelve m., cream soup, tapioca pudding, cocoa, toast and butter. Six p. m., strained cereal with cream, fruit juice or strained fruit, cocoa, toast and butter. Lunches may be given of milk, buttermilk, malted milk fruit juice.

If on the other hand more marked symptoms appear, it is best to employ a strict milk and water diet, at least temporarily, and then gradually add cereals, cream, sugar, bread, vegetables as in acute nephritis. The main object of Dr. Strouse's diet scheme is functional renal rest.

The last type of dropsy to be considered, and one which is most troublesome and more often seen than either of the preceding types, is that caused from diseases of the heart. We will consider only the decompensated heart.

The severely ill patients with dropsy, generally will react to the same treatment already given for the dropsical cases of nephritis.

The Karell cure often causes a rapid disappearance of the edema. Dr. Strouse claims a salt free diet has the same indications in heart disease that it has in kidney disease. It can be used when we do not wish as low a diet as the Karell cure.

Small meals at frequent intervals will relieve the burden of the heart and kidneys, and will not produce pressure on the heart by disturbing the stomach. Patients such as we often see bed ridden, and enormously dropsical, require a very light diet. His diet must contain substances re-

quiring only the effort of swallowing. The following is a menu.

Dr. Strouse has compiled what he calls the modified Karell treatment, salt free.

Milk 200 c.c. at 8 a. m., 12 m., 4 p. m., and at 8 p. m. For five to seven days. Eighth day, milk the same as above, 10 a. m. one soft egg, 6 p. m. two slices dry toast. Ninth day, milk as above, 10 a. m. one soft egg, and two slices of toast. Tenth to twelfth day, milk as above, 12 m. chopped meat, rice boiled in milk, easily digested vegetables, 6 p. m. one soft boiled egg.

As convalescence is established, the diet can gradually be increased, until a full tray is reached.

All meats and vegetables should be chopped and scraped at first, and the heavier foods should be given only when the heart is practically compensated. No patient, who has ever shown signs of dropsy due to compensation of the heart, should eat large meals, the five meal a day should be his custom through life, unwise habits should be corrected on the whole. The most suitable diet is one which tempers the life long habits of the patient. Thus, we have tried to present to you, views of Dr. Solomon Strouse, a man who has given many years of faithful study to dietetics especially directed to alleviate the dreaded complication of dropsy.

In conclusion, we can say, that with Dr. Strouse's method of feeding our patients, in acute nephritis, and the additional administration of some form of digitalis, and an occasional tapping and withdrawing the fluid from the severe cases of chronic nephritis, and the decompensated heart cases, we are enabled to materially assist our patients in making them comfortable, and in many cases effecting a cure.

Discussion

Dr. C. P. Howard, Iowa City—When Dr. Thielen submitted this paper to the program committee it was felt to be one of the most important topics for presentation at this meeting and would certainly be very good for discussion. All of you must have felt, in treating dropsy of cardiac or renal origin, that our methods in the past have been entirely unsatisfactory. It is largely through the American school of medicine that advances have been made. Two or three years ago an extensive study of nephritis and matters pertaining to nephritis was instituted in this country, particularly in Boston and Baltimore and New York centers, and thanks to the work of Rowntree and Gerraghty, Christian, and a number of other men, we are at last approaching some degree of clinical knowledge of the treatment of renal disease, largely, of course, through an appreciation of the physiological and pathological anatomy of nephritis. One fact that was soon learned by the laboratory man and applied by him to the clinical case, was that we had no diuretic that was of use, indeed we had no

diuretic that was not of positive harm in the treatment of dropsy of nephritis with the exception of water. As O'Hare and Christian pointed out, one could produce an experimental nephritis in an animal and then further injure it by the administration of large doses of the commonly accepted diuretics. This seems to be not only true of the laboratory animal, but also true of our patients, and all of you can recall cases with nephritis, with suppression of urine and with edema, and remember how often the administration of diuretics has actually done harm. It was very necessary that when our drug therapy was taken from us, some other line of attack should be developed. It was long known that chlorids and nitrogen were the injurious substances in the diet, and it was not a very far cry to try to eliminate as far as possible chlorids from the intake. It was very much harder to institute a reduction of the nitrogen, and when such a reduction took place it was not thoroughly appreciated for some time that a nephritic patient can be fed on a low protein diet and kept in metabolic equilibrium very much more easily than when the milk cure was the recognized line of attack. It is interesting to note that the case of ordinary scarlet fever nephritis when put on a diet of a quart of milk, was getting more nitrogen in his diet than he would get in four or five meals a day of the low protein diet. A person who has been on a strict milk or other restricted diet is surprised at the variety and substance of the low protein diet; it is really very palatable and nutritious. So that, remove the chlorids allowing only sufficient salt to flavor certain articles of food which the patient desires, not giving over one or two grams of sodium chlorid in the twenty-four hours and serving it with the meal rather than in the kitchen; and finally reducing the proteids very markedly, encouraging the water intake and regulating the bowels, and, in severe cases, giving stimulants (and especially, of course, digitalis), one has done about all he can do for such a case. And it is considerable, because, as Dr. Thielen has said (and I have had the good fortune to see one or two of Dr. Thielen's cases), the improvement is remarkable and sometimes the treatment establishes a cure. One more word. When we get a distinct improvement from any diuretic it is usually from digitalis, and this improvement always takes place in the cardiac type of nephritis or the cardiac type of dropsy. We have found again and again in our wards, when the patient was very edematous and presented evidence of an enlarged heart and a failing kidney, that after a day or two's preparation with purging then the digitalis did remarkably well for the patient. That was the only diuretic except water than seemed to have any effect. And of all digitalis preparations it is our belief that the infusion is the one to be recommended. This preparation seems to have more of the diuretic qualities because it contains more of the active principles of digitalis and is less irritating to the gastric mucosa than the tincture; when given in the usual manner of large doses every four hours for five or six doses, I think it yields the best results.

HISTORY OF MEDICINE IN IOWA

Part First—Extending from 1820 to 1840

D. S. FAIRCHILD, M.D., F.A.C.S., Clinton

History of Medicine in Iowa; particularly in the early days of its settlement, and the influence of medical practitioners in developing the state, including the history of medical schools, medical societies, and medical journals.

In our endeavor to revive the memory of early practitioners of Iowa we have been obliged to seek information from many sources. In 1875 we succeeded in securing data from older physicians then practicing who had been acquainted with the first physicians who came to Iowa to practice their profession. We succeeded in securing quite satisfactory information from the greater number of the older counties, which we have later been able to supplement through the courtesy of physicians who have kindly examined county records, from Gue's and Brigham's Histories of Iowa, and from the publications of the State Historical Society.

In an earlier publication on the early medical history of Iowa we limited our work to recording the history of individual counties, medical organization, biographical sketches and other matters having chiefly a local interest. We shall now attempt to disregard county lines and consider medical facts in chronological order pointing out the relation of medicine to the development of the state, the influences which led doctors to emigrate to Iowa and the influence the medical profession exercised on the welfare of the state and the part taken by individual physicians in local and state affairs. Our former efforts to preserve the early record of physicians and their doings has some merit in so far as individual county medical organizations are concerned, but does not constitute a medical history of the state, which should include the early pioneers and later the coordination of the influences which go to make up the educational factors that lead to internal development and which may give the profession of Iowa a place suited to the peculiarities of environment, and their ability to contribute to the general fund of medical knowledge, also to demonstrate their fitness for organization and independent development.

There will be many omissions, no doubt, growing out of the fact that there were but few records made in early days that have been preserved. The early volumes of the transactions of the State Medical Society contain some helpful information extending as far back as 1868. The first volume of the Iowa Medico-Chirurgical

Journal published in Keokuk in 1850 and kindly loaned to me by Dr. Frank Fuller and four copies of the Iowa Medical Journal, which succeeded the Iowa Medico-Chirurgical Journal, procured for me by Dr. Moorhead from the library of Dr. J. C. Hughes of Keokuk, the first medical editor in Iowa, The Iowa Medical Reporter published by Dr. F. E. Cruttenden and the later Iowa Medical Journal have furnished much valuable information.

Many of the medical men who came to Iowa early were not only physicians but like other men, interested in adventure, and in what might happen and what opportunities might present themselves. Opportunities for the practice of medicine could only come with settlement, and communities more or less populous, but it always happens that when new colonies are formed men of all classes more or less skillful for one reason or another become a part of the enterprise.

Iowa, like the Western country, generally was interesting at first on account of the fur trade with the Indians. Trading stations were established at various points under the control of agencies located at various points, particularly at Prairie du Chiene and St. Louis. As the fur trade developed and as rivalries and disputes arose in which the Indians themselves came to be more or less involved, it was necessary to establish government agencies and temporary military posts to which surgeons were sometimes attached. We have endeavored as far as possible to find out who these men were but with small success, as in times gone by medical men in the service of the government received small consideration, and only incidentally are the army or post surgeons mentioned.

The country which was afterwards to be known as Iowa was marked only by its relation to the Mississippi River and the principle stream flowing into it (Des Moines River). It appears that in 1800, Jean Baptist Faribault established a trading post about two hundred miles above the mouth of the Des Moines River where he remained four years. In September, 1808, a fort was commenced at a point on the Mississippi and called Fort Madison. The fort was completed in 1809-10. In September of the same year it was abandoned. Eighty-one men were stationed here including the factor and employes under the command of Lieut. Kingslev who was relieved in 1809 by Captain Horatio Stark, who was in turn relieved by Lieut. Thomas Hamilton. The records accessible to us do not show that a surgeon was detailed to Fort Madison although among the provisions for the fort was a surgeon's office.

There seems to have been but little interest shown as to the country west of the Mississippi now known as Iowa prior to about 1820. Up to that time Indian hunters and white traders roamed the prairies, but as settlers began to look beyond the great river for prospective homes, the government began to seek a fuller knowledge of this relatively unknown country. The discovery of lead in the vicinity of the future city of Dubuque by the Indians attracted the attention of white adventurers and the large trading post near by, Prairie du Chiene, gave Dubuque a prominence as an objective point, second only to Fort Madison, an outlying post from St. Louis, probably the most important trading point on the river.

Seeking among the names of the explorers, hunters and traders we find this brief notice—"On August 11, 1817 Major Long and Dr. Lane ascended for some distance the De Moyer River then at a low stage." It is to be presumed that Dr. Lane was an army surgeon connected with an exploring expedition. A little later we learn from an account written by Stephen Watts Kearny and Henry Schoolcraft of a military expedition across northern Iowa in 1820; that on visiting Dubuque mines on the morning of August 5th Kearny stopped his six oared keel-boat at a settlement of traders, found Dr. Muir, late of the Army, with his squaw and two children, and that he and his men were treated politely by Dr. Muir and the traders. This was at a time when the Fox Indians owned the Dubuque lead mines discovered by Julian Dubuque, previously worked, however, by the Indians, and over which there was much controversy between the miners, traders and Indians. The Indians were repeatedly driven away by whites and reinstated by the government until after the close of the Blackhawk War in 1833, when by treaty with the Sacs and Foxes the government came into possession of eastern and northern Iowa.

Dr. Samuel C. Muir was a graduate of the University of Edinburg and a surgeon in the United States Army. Sometime before 1820 Dr. Muir married a girl of the Sac Nation and about the date above mentioned he was stationed with a command at Fort Edwards now Warsaw, Illinois. Some years later an order was issued requiring officers of the Army to abandon their Indian wives. Dr. Muir refused to comply with this order and resigned his commission. After leaving the Army Dr. Muir settled on his farm at the mouth of the Des Moines River where Keokuk now stands and where he died in 1832 of cholera leaving his family, wife and five children, in destitute circumstances, the greater part

of his property being involved in litigation. Keokuk was then known as Pinch-e-chut-tech and Dr. Muir was the first white settler.

Dr. Isaac Galland with his family settled on the west shore of the Mississippi in 1829 at a point called At-Wip--E-Tuck afterwards known as Nashville. Dr. Galland hoped to build a city here but Keokuk became too strong a competitor. It was here that the first white child was born (in Iowa) Eleanor Galland in 1830 and where the first school was held, taught by Gerryman Jennings. In 1836 Dr. Galland established the second news paper published in Iowa called the Western Adventurer. Two years later the paper was sold to James G. Edwards and the name changed to "Madison Patriot." Dr. Galland then moved to Fort Madison. While at Montrose Dr. Galland wrote a book descriptive of Iowa from which we copy an abstract published in Gue's history of Iowa, Vol. I, page 153:

"As we passed up the river we saw the ruins of old Fort Madison about ten miles above the rapids, near a sand bluff rising perpendicular from the water's edge. On the second day after, our keel boat reached Shoe-o-con or Flint Hills. An Indian village of the Foxes stood at the mouth of the Flint Creek; its chief was Ti-me-a. In 1825 I took a trip with an ox team and an Indian guide up the river. We passed Wapello's village and crossed the Des Moines River on a raft. We ascended the high lands above Grave Yard Bluff (now Buena Vista). We followed the divide, passing a lone tree standing on the bluff, which was a land mark for the Indians. In the fall of 1825 I settled at Quash-qua-me village, where my father-in-law, Captain James White, had purchased the old trading house and a tract of land adjacent, which was an old Spanish grant made to Monsieur Julian, on which he lived in 1805. Captain White made his first trip to this point on the steamer Mandan, which was the first that came to the foot of the Rapids."

Through the courtesy of Dr. C. F. Wahrer we have been able to secure the following additional history of Dr. Galland:

"The career of this most versatile character was picturesque and viewed from this distance of years most interesting and characteristic of the early settler.

"Dr. Galland was born in 1790 while his parents were on the way from Virginia to Marietta, Ohio. After he was of age he studied at Fulton County, Illinois, where afterward he began practice. In 1827 he moved to Lee County, Iowa, where he practiced at different times as well as in Hancock County, Illinois, where he lived a while just across the river from Montrose."

"It was said of him that he was a brilliant physician and that he was especially successful in the treatment of cholera which in his day often visited his field of practice, and in the prevention of the epidemic."

"Far and wide over a large field in almost every cabin he placed a chest or box about a foot cubic on which in red letters was printed the legion 'Dr. Isaac Galland's family medicines.'

"The box contained the usual and ordinary remedies ordinarily used by the doctors in those days, but were very helpful when physicians and drugs were scarce. The main time of his services as a physician in and about Montrose and Nashville, now Galland, a few miles below Montrose, was from 1833-39. He did not practice all the time but was employed in many pursuits. Among them was, while he lived across the river in Illinois, his activity as a Mormon Elder, and the Prophet Joseph Smith's private secretary. When Smith lost prestige and his glory waned in Nauvoo Dr. Galland left the church. He was one of the organizers of the New York company that promoted some land scheme near Nauvoo, also wrote a history of Iowa, made a map of Iowa and in 1840 wrote a book 'The Iowa Emigrant' now almost extinct but for which a large price is paid when it can be obtained.

"He was a patron of schools and under his influence the first school in Lee county was taught, and its teacher, fuel and a room were all provided for by this indefatigable worker.

"He and Dr. Samuel C. Muir of Keokuk were great friends and worked together in all that pertained to their professional interests. The latter died in Keokuk in 1832.

"Between them they laid out the City of Keokuk and named most of its principal streets.

"His daughter Eleanor was the first white child born in Lee county.

"In a paper he edited for some time he described the prairies and waters of Iowa, its animals, serpents, birds, plants, the Indians, their lives and habits, and showed himself an able writer and historian.

"Not much is to be obtained of his early medical life. He was much esteemed by his patients as an able man, and enjoyed the confidence of all that came in contact with him. He died in 1858 and was buried in Fort Madison."

It is interesting to know of the friendly relations of these two men trained as practitioners of medicine yet from environment having other interests. It will be seen in this and in numerous other instances that men educated as physicians had much to do with the development of the state. The educated doctor was peculiarly fitted to aid

in the best way in pioneer work. His cultivated powers of observations, his freedom from prejudice and superstition, and his knowledge of the dangers surrounding the early settler made the doctor unquestionably the most valuable help to the settlement.

In the early and rather unsettled ownership of the Dubuque lead mines the name of a Dr. Jarrote appears in connection with a local organization for the government of the miners on the west side of the Mississippi River. It appears that Dr. Jarrote was elected the first governor and James L. Langworthy clerk of this organization which adopted a code to govern a rather unruly body of men. Dr. Jarrote was probably a man of executive ability as the laws framed by this organization are said to have been obeyed, and as rigidly enforced as have been the laws of later days.

Probably the first physician to locate in Iowa to practice medicine was Dr. Frederick Andros who came to Dubuque in 1833. At this time Iowa was a part of Michigan territory. (Four years before Michigan was admitted into the Union as a state.) Michigan territory included Wisconsin, Iowa, a part of Minnesota and the Dakotas. At the session of the Michigan territorial legislature held in 1829 a bill was introduced which provided that all of the territory lying south of the Wisconsin River, west of Lake Michigan and east of the Mississippi River and north of Illinois be formed into a new county to be known as Iowa county and the county seat be located at Mineral Point. Dr. William Brown of Wayne county (Michigan) presented the petition on September 14, 1829, which was referred to the committee on territorial affairs, praying for the new county, and a bill was reported to organize the county of Iowa which became a law (Iowa County, Wisconsin with Mineral Point as county seat is now a part of the original Iowa county).

It is not known who drafted the bill but it is supposed to have been the work of Dr. William Brown or Henry Schoolcraft or of both and one of them suggested the name Iowa. The reason for the name is unknown (perhaps from the Ioway tribe of Indians). It is therefore quite probable that the name Iowa came from a doctor.

In October, 1835, George W. Jones was elected delegate to Congress to represent Michigan territory. He secured the passage of a bill creating the territory of Wisconsin which included Iowa, Minnesota and Dakota. Previous to this time, in 1834 at the Sixth Territorial Legislative Assembly of Michigan a bill was passed to divide the Iowa district into two counties, Dubuque county and Des Moines county, by running a line due west from the lower end of Rock Island. This

was one year after Dr. Andros located in Dubuque. Two years later, or in 1836, when Dr. Andros had enjoyed practically the entire practice of medicine in Iowa for three years the population was 10,531.

Dr. Frederick Andros was a native of Massachusetts, a graduate from the literary department of Brown University, 1822 and from the medical department in 1826, came to Dubuque in 1833. In 1837 he removed to Clayton county and engaged in farming. In 1845 he resumed practice having received the appointment of surgeon at Fort Atkinson and the Winnebago agency where he remained until the Indians were removed to Long Prairie, Minnesota in 1848. Dr. Andros went with the Indians and remained with them until 1854 when he returned to Garnavillo, Clayton county and resumed practice. In 1861 he removed to McGregor.

Dr. Henry H. Clark of McGregor in an address before the Iowa State Medical Society relates some personally reminiscences of this interesting man who had the courage to be the first to offer his professional services to the settlers of Iowa even before it became the Iowa territory. Dr. Clark came to McGregor in 1870 as a young graduate from the Chicago Medical College (Northwestern University) and soon became a close personal friend of Dr. Andros. We cannot do better than to present Dr. Clark's tribute to Dr. Andros in his own words.

"A few days after my arrival (McGregor) I called on the Doctor (Andros) then nearly seventy years old and presented my credentials. He gave me the 'glad hand' and we became firm friends.

"Some months before he had met with an accident which had severely impaired the strength and usefulness of his right hand. My association with him was therefore fortunate, for, while he was the surgeon and received the credit if any were due, and the emoluments if such were forthcoming, I did the work and gained the experience.

"Our association continued in this manner for about ten years when the Doctor decided Iowa was getting too civilized and tame and went west to grow up with the country. He was then eighty years old. After practicing in Dakota for ten years, he changed his residence to Minneapolis where he died at the age of ninety-one.

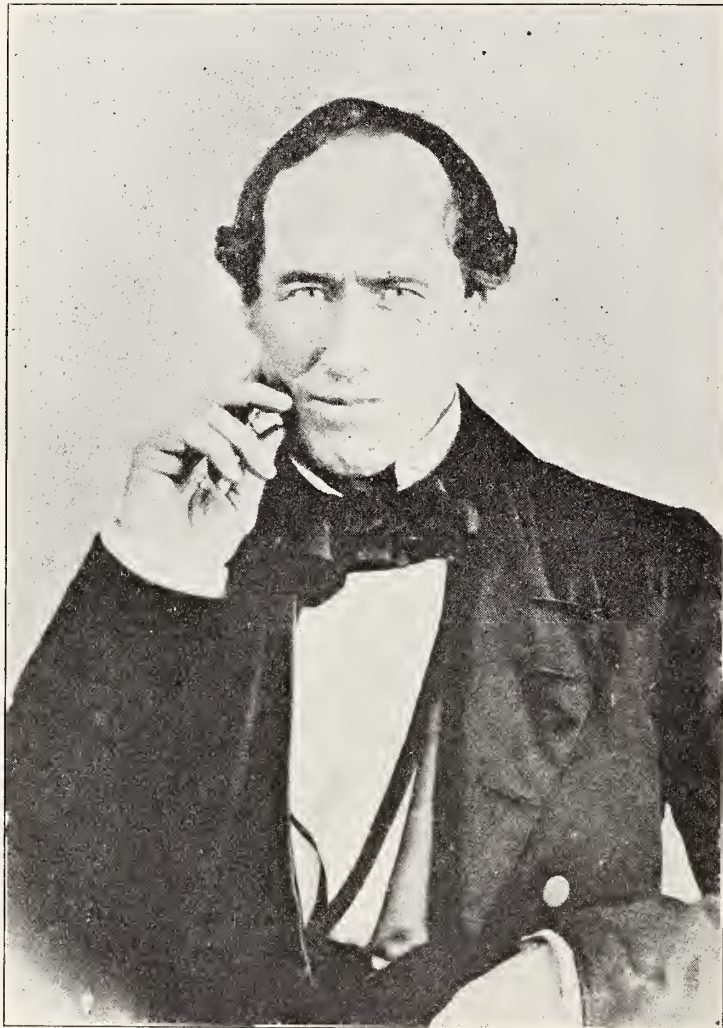
"Dr. Andros was far superior in intelligence and ability to the average physician of his day but he was typical frontiersman and something of a character. I remember a country drive I took with him a short time after I came to McGregor. He drove a good horse but he interfered so badly that either his right or left hind leg seemed to be

in the air all the time. As we were jolting over a rough road back in the Mississippi hills the Doctor suddenly stopped his horse with the remark, 'There's the damndest nicest spring over there you ever saw.' We got out and walked over to where a fine stream of water gushed from the rocks and formed a pool about three feet in diameter and eighteen inches deep. The Doctor took off his high silk hat which he always wore and in which he carried his letters, red bandanna, cigars, stethoscope and always either a clean or dirty collar, pulled off his coat, rolled his sleeve to his elbow and thrust his hand to the bottom of the spring. After lifting aside a few stones he pulled out a flask of whiskey. He uncorked it, took a generous drink and then returned the bottle to the bottom of the spring for future use."

It is easy to understand that the practice of medicine in Iowa was anything but attractive in the early days. The first settlers did not come to Iowa to build towns or to establish centers of trade but to find farms and build homes often without a definite location in view, traveling along in small companies until a desirable spot was found, and then a "settlement" was made.

The accidental selection of a location is illustrated by the tradition attached to the foundation of the village of Lost Nation in Clinton county. It is said that a family traveling with a company of pioneers accidentally wandered away from their companions and were lost. In endeavoring to find the main company they came to a desirable spot and "settled." It was not until several months later that the lost family was found. This circumstance led to the naming the place "Lost Nation." Many years passed before a physician felt a call to locate there.

With 1833, when Dr. Andros came to Dubuque, the history of the practice of medicine in Iowa may be said to have had its beginning. As we have already shown, the practice of medicine in Iowa in the early days of its settlement was neither attractive nor remunerative. The settlers were widely scattered and the towns were but little more than a closer aggregation of settlers with some facilities for trade and to supply families covering a wide extent of country with certain necessities of life. Widely scattered as the settlers were one necessity was perhaps greater than any other, and that was the need of relief in sickness and accident. It is true that the pioneers were a hardy people but sickness, suffering and accident did go with them and more than lay help was needed to meet certain exigencies of life, and there was withall a spirit of adventure that frequently led physicians of no mean skill or ability to adventure into a new country to



JAMES MOORE ROBERTSON, M.D.

Born October 14, 1804

Died December 31, 1878

become pioneers in the building of homes, a civilization and a commonwealth.

We have endeavored to find the names of physicians who came to Iowa and the part they played in developing the territory and state from the earliest actual settlement. It is to be presumed from the character and the courage of these men that they were not content to limit their activities to the relief of the sick and injured alone, but must needs take a part in common with all pioneers in community welfare, and we shall not be mistaken in our estimate of Iowa pioneer physicians. From the very nature of their profession and its traditions the seeking of wealth and political advantage was the least of their ambition, and for that reason few names of physicians who gained wealth or political distinction will be found in the annals of history but their usefulness in very many ways will be held in the memory of men and on the pages of history, and the writer who shall undertake to say that the medical profession was only incidental to the development of the country is not entitled to serious consideration.

In June, 1834, Congress passed an act providing that; "All that part of the territory of the United States bounded on the east by the Mississippi River, on the south by the State of Missouri and a line drawn due west from the northwest corner of said state to the Missouri River on the southwest, and west by the Missouri River and the White Earth River falling into the same; and on the north by the northern boundary of the United States shall be attached to Michigan territory."

In October, 1835, George W. Jones, delegate to Congress from Michigan territory, secured the passage of a bill creating the territory of Wisconsin which included Iowa, part of Minnesota and Dakota.

In July, 1838, Congress passed a bill establishing the territory of Iowa including that part of the territory of Wisconsin lying west of the Mississippi River.

At an extra session of the Sixth Legislative Assembly of the Michigan territory held in September, 1834 the Iowa district was divided into two counties, Dubuque county and Des Moines county by a line running due west from the lower end of Rock Island. At the second session of the Wisconsin territorial legislature held in Burlington in 1837, Dubuque county, and Des Moines county, were divided into sixteen counties.

We shall now follow as nearly as possible the appearance of physicians in these several counties and the work participated in by them in developing the territory and later the State of Iowa.

We shall for convenience endeavor as far as the data at hand will permit consider first the pioneer physicians who settled in Iowa prior to 1840. We have seen that Dr. Andros came first and has the distinction of being the first real pioneer physician to locate in the state for the distinct purpose of practicing medicine.

Through the cooperation of Dr. H. B. Young of Burlington who kindly examined the early records of Des Moines county we have been able to secure some valuable data in relation to early physician-settlers, which we have been able to supplement from other sources in several instances.

In 1832 Morton M. McCarver and Simpson S. White established a ferry across the Mississippi River at Burlington and were the first settlers. In the fall of the same year (1832) Dr. William R. Ross with Benjamin Tucker laid out and platted the City of Burlington. Dr. Ross brought a stock of goods. It is probable that his time was more occupied with trade than with the practice of medicine. A few settlers only had crossed the Mississippi and they were not of the kind who needed medical services.

Dr. Crawford from Brook County, Virginia, came to Burlington in 1833. Later he moved to Texas. We have been unable to secure further information in relation to this pioneer physician. Dr. Schiff came to Burlington from Kentucky in 1834 and Dr. Cutler from Indiana the same year. These two gentlemen formed a partnership. Dr. Cutler died soon after (within the year) and Dr. Schiff returned to Kentucky.

Dr. Teas located in Burlington in 1835 and Dr. D. W. Hitchcock came the same year from New York.

Dr. S. S. Ransome came to Burlington in 1835 where he remained until his death in 1872.

Dr. Enos Lowe came to Burlington in 1837. Dr. Lowe was a man of marked ability and great energy; representing a type of physician not uncommon in that day. Physicians who not only practiced medicine successfully but were important agents in the welfare service of the commonwealth in which they cast their lot.

The influence of these early physicians in the social and economic advancement of the territory and state cannot be over estimated. Nearly every county in Iowa has had among its pioneers, men of this class, men whose title of doctor may have been forgotten, and only by painstaking inquiry have we been able to find that while serving in a public capacity they at the same time through their knowledge and skill as practitioners of medicine were rendering invaluable services to the settlers who, however hardy were not immune to

distressing misfortunes, sickness and accident. Very few of these early physicians found time in the midst of public welfare service and professional duties to seek the fortunes sometimes secured by their better remembered associates whose activities were more distinctly personal. One of these public servants was Dr. Enos Lowe. Born in Guilford County, North Carolina, May 5, 1804. Graduated from the Ohio Medical College. Located in Greencastle, Indiana, later removed to the Black Hawk Purchase and located in Burlington, then a small frontier village, where he practiced medicine. He soon became identified with political and economic affairs, and was widely known and influential in various ways. Dr. Lowe was elected a member of the First Constitutional Convention. (The constitution framed by this first convention was rejected.) In 1846 a second convention was held and a constitution framed which was adopted, under which Iowa became a state. Dr. Enos Lowe was a member of the convention and had the honor of being elected to preside over the deliberations of this body. Dr. Lowe was active in the organization of the Iowa State Medical Society in 1850 and was elected its first president. In 1853 he was appointed receiver of the United States Land Office at Council Bluffs. In 1854 he was one of a company that laid out and platted the future City of Omaha and became one of its first inhabitants.

At the breaking out of the Civil War, Dr. Lowe returned to Iowa and was appointed surgeon to the Fifth Iowa Infantry with which he served to the end of the war. He died February 13, 1880.

Two other physicians came to Des Moines county prior to 1840. One, Dr. Jeremiah Hall located in Danville, twelve miles west of Burlington in 1837 and the other, Dr. Leal Fullenwider located in Rorsak in the same year (1837).

One of the eight counties formed from the division of Des Moines county by the act of the Wisconsin Territorial Legislature at its second session in Burlington in 1837 was Johnson county. It may be observed in this connection that at this session delegates from the two original counties, Dubuque and Des Moines were elected to Memorialize Congress to organize a separate territorial government of the part of Wisconsin territory lying west of the Mississippi River, and in June, 1838, a bill was passed by Congress establishing the territory of Iowa, which included a part of Minnesota and Dakota. In 1839 the capital of the territory of Iowa was located at Iowa City and on August 18th a sale of lots was held and two hundred and six lots disposed of for \$28,854.75. That a stranger might

find his way to the capital of Iowa Lyman Dillon was "employed to plow a furrow from Iowa City to the Mississippi River using a strong breaking plow and five yoke of oxen." This furrow of one hundred miles is said to be the longest furrow on record.

In 1838 the year following the organization of Iowa territory, Dr. Henry Murry came to Johnson county and located in Iowa City. Dr. Murry was born in Dublin, Ireland in 1816, graduated from the medical department of the University of Louisville, Kentucky. He was the first physician to settle within the present limits of Johnson county. Dr. Murry was a successful physician and surgeon and performed many capital surgical operations. He was at one time coroner and county physician. He died May 9, 1880.

The second physician to locate in Johnson county was Dr. Ezra Bliss. Dr. Bliss was of New England birth and a graduate from Castleton Medical College, Vermont in 1837. He came to Iowa City in 1839, a few months after Dr. Murry. After a few years of successful practice he moved to New York City, spending much of his time in Europe.

In examining the records of the Iowa State Medical Society and other documents pertaining to Iowa history the name of Dr. J. M. Robertson not unfrequently appeared but was unable to gather data enough to frame a biographical sketch.

I regretted the loss from our records of so valuable a man and eminent physician and publicist, when one day it occurred to me to appeal to Dr. Charles A. Robertson of Chicago a grandson of Dr. J. M. Robertson for help and it so chanced that on this very day and moment Dr. Charles appeared and in his bluff and friendly way assured me I should have what I desired.

James Moore Robertson, M.D., was born in Washington County, Pennsylvania, October 14, 1804. Died in Muscatine, Iowa, December 31, 1878. Dr. Robertson was a son of Peter Robertson, a native of Scotland who emigrated to Pennsylvania in his youth and who died when James was six years old. His mother was Jane Moore, a native of the United States of English ancestors. His mother died when he was sixteen years old and he was reared from that time by Dr. William Stephenson of Cannonsburg, Penn., who was a friend of his father. Dr. James M. Robertson received his literary education at Jefferson College, Cannonsburg, Pennsylvania, and his medical education from Jefferson Medical College, Philadelphia, from which institution he graduated in 1827. He entered practice at

Georgetown, Lancaster County, Pennsylvania, where he remained six years. In the spring of 1833 he removed to Franklin County, Ohio, where he practiced five years and then removed to Burlington, Iowa, or Iowa Territory in 1838. After a few years practice in Burlington he moved to Columbus City which he helped to plat and where he practiced his profession until 1870 when he removed to Muscatine where he continued practice up to his retirement in 1874, after forty-seven years of extremely arduous service in his profession. It was now given him four years of rest until the final close of a most useful life at the age of seventy-four years.

While in Burlington and Columbus City, Dr. Robertson did a practice extending from Cedar Rapids to Keokuk mostly on horseback with an expenditure of strength and energy and with an endurance that can scarcely be appreciated by the practitioner of today.

Dr. Robertson did much to help organize a new country and make treaties with the Indians whose language and customs were well known to both himself and his son William. He was a member of the Iowa State Medical Society, later vice-president and treasurer. He was a member of the Ohio State Medical Society. The Louisa and Muscatine County Medical Societies. In 1865 he was elected state senator and served four years. He was married to Maria Armstrong of Lancaster County, Pennsylvania, and had one son, William Stephenson Robertson.

Dr. James Moore Robertson was a man with many friends but no enemies. In politics he was staunch Republican. In religion a devout Presbyterian and for many years an elder in the church.

In personal appearance Dr. Robertson was tall and erect, wore a tall hat and blue broadcloth clothes. In appearance and address he was the type of a medical gentleman. The strong ancestral Scotch-English blood of Dr. James Moore Robertson made itself manifest in the son, Dr. William S. Robertson and in the grandson, Dr. Charles A. Robertson all of whom were eminent physicians of whom Iowa may well be proud.

Dr. Silas C. Swan, a native of New York and a graduate of a Chicago medical school located in Iowa City in 1839 where he died in 1845.

Dr. S. H. Tyron came to Marion, Lynn county about 1838. At that time few white settlers had arrived in Lynn county, which was not created and named until December, 1838. Marion was laid out and established as the county seat in 1839.

That part of Lynn county about Marion and Cedar Rapids became the center of varied interests between the organization of the county in 1838 and 1849.

It is recorded that a store, a mill and a court house were built before the close of 1840. A Methodist church and a gang of horse thieves were organized, the latter having Cedar Rapids as its headquarters in the first cabin built on the present site of the City of Cedar Rapids by one Shepard, a notorious outlaw.

We have no information as to the nature of Dr. Tyron's practice, only that he was a well known character. He was at one time acting county clerk and occupied many places of trust and honor.

The history of medicine in Iowa commences with the appearance of Dr. Samuel C. Muir, an Army surgeon in 1820 and the first section ends with 1840. During this period many changes occurred of a territorial and governmental nature.

In 1834 Congress passed an act attaching all that territory bounded on the east by the Mississippi River, also fixing the other boundaries, to Michigan territory. In October, 1835, a bill was passed by Congress creating Wisconsin territory including also the territory bounded on the east by the Mississippi River. In July, 1838, Congress passed a bill establishing the Iowa territory. In July, 1837, the Wisconsin Territorial Legislature sitting in Burlington began dividing what was soon to become Iowa territory in counties. The two first to be known as Dubuque county and Des Moines county.

In 1836 a census showed a population within the present limits of 10,531. In 1840, 43,112. During these territorial changes Dr. Frederick Andros located in Dubuque (1833). To Nashville came Dr. Galland (1829). To Burlington came Dr. William R. Ross (1832). Dr. Crawford (1833), Dr. Schiff and Dr. Cutter (1834), Dr. Teas, Dr. Hitchcock and Dr. S. S. Ransom (1835), Dr. Enos Lowe (1837), Dr. Jeremiah Hall, Danville (1837), Dr. Leal Fullenwider, Korsak (1837), Dr. James Moore Robertson, Burlington (1838). In 1839 there came to Iowa City, Dr. Henry Murry, Dr. Silas C. Swan, Dr. Ezra Bliss, and to Marion Lynn county came Dr. S. H. Tyron.

We have in the foregoing account of the early medical arrivals in Iowa attempted to point out as far as the records permit the work and activities of these men.

THE TREATMENT OF EMPYEMA*

C. A. HEDBLUM, M.D., Mayo Clinic, Rochester, Minnesota

If efficient treatment of empyema were always achieved by the generally accepted drainage operation, there would be little occasion for further discussion of the subject. That such is not the case, the constant succession of patients in a chronic condition, always present in any large hospital clinic—debilitated, deformed, mutilated—bear ample witness. The high mortality (20 to 30 per cent. in adults and 50 to 70 per cent. in infants), is indicative not only of the critical conditions in a large proportion of these cases but also of the relative inadequacy of present day treatment.

Infected hemothorax or traumatic empyema is, furthermore, the chief cause of death in cases of war wounds of the chest. The mortality due to hemolytic streptococcus empyema in our cantonments has, at some periods, reached 50 per cent. A considerable proportion of such cases also develop chronic empyema.

The profession has not been satisfied with results. The literature describes a large array of apparatus, drainage devices, and modifications of operative procedures, periodically re-discovered. Recently there has been a revival of the almost forgotten antiseptic treatment. It may not be amiss, therefore, to review the subject briefly in its historic aspect.

Intercostal incision or rib resection for drainage was known to the ancients. Hippocrates recognized also variation in virulence of infection, for he taught that "when empyema is treated either by cautery or incision, if pure and white pus flow from the wound the patients recover, but if mixed with blood, stringy and fetid, they die." With Galen the operation was forgotten. After fourteen centuries when the works of Hippocrates were again brought to light and when a rational conception of the pathologic anatomy of the process was brought about through postmortem investigation, thoracotomy was again resorted to. The operation was, however, held in great dread. Dupuytren, one of the chief advocates of thoracotomy in his day, himself died of empyema. He is credited with having said, "I had rather die at the hand of God than that of the surgeon." With no anesthesia and no antiseptics and a high mortality, one can easily understand how aspiration came to be substituted for thoracotomy. Introduced by Potain, Playfair and Dieulafoy, it

found many adherents. Only after the time of Lister, did thoracotomy again gain acceptance. Roser, in 1865, is credited by Kuster as being the first to adopt it as a regular procedure.

With the antiseptic period date the first attempts at sterilization of the pleural cavity. Carbolic, boric and salicylic acids, zinc sulphate, zinc chloride and iodine were the solutions first used. The iodoform gauze pack was also tried. A Spanish surgeon aspirated pus and injected from 6 to 20 per cent. carbolic acid two to three times a day. Frequent collapse, carbolic acid poisoning, and many fatalities discouraged the practice. Murphy's formalin and glycerin injection, and Beck's bismuth and vaseline paste have, until recently, remained the representatives of this type of treatment.

The desire to avoid pneumothorax and the frequent resulting collapse of the lung, led to suction drainage, first devised by Buelau, in 1876. He introduced a large size catheter through a trocar, the trocar being then withdrawn. The catheter was connected with a dependent rubber tube. The siphon action of the column of pus in the tubing constituted the suction. Perthes' method has been largely used in Europe. Three to five centimeters of one rib are resected and a rubber tube supplied with a collar inserted. The collar is smeared with vaseline or cemented fast with colloidin. A rubber membrane supplies a certain amount of valve action. Perthes also employed actual suction by connecting the tube to a water faucet exhaust. Cotton, Ware, Roth, and many others have recently devised different modifications of gravity suction water bottles. Schmidt, in 1909, modified the Buelau apparatus by attaching a three-way cannula, one opening leading to an air pump, one to a manometer for regulating the suction, and the third opening carrying off the pus.

One shortcoming of this type of drainage is the leak that soon begins from pressure necrosis of the tissue surrounding the tube, whether the drainage is introduced through a trocar or sutured into a thoracotomy wound. Robinson attempted to correct the fault by screwing a threaded cannula into a trephine opening in a rib. This maintains a tight joint for a week or ten days.

Open pneumothorax, collapse of the lung and the chronic cavity often resulting from wide open drainage, led to the adoption of valve-like arrangements allowing for the escape of pus during expiration, but closing the wound during inspiration. To this end, Cabot, in 1880, applied a piece of sheet-rubber over the wound. This prin-

*Presented before the Iowa and Illinois State Medical Society, Davenport, Iowa, July 11, 1918.

ciple has since had many advocates. Cotton recommends cementing the membrane on three sides. Lund fashions a skin flap from above the rib to be resected, and places the slanting opening of the drainage tube in such a position that on inspiration the skin flap occludes the lumen. Baylor describes a rubber valve in a metal tube, Hutton, a gutta-percha nipple slit at the end and inserted in a glass tube, and Williams, an ordinary rubber valve. Boinet devised a "flutter-valve" at the end of an ordinary drainage tube. The so-called ventilation drain of Tiegel consisted of a piece of lead tubing bent to fit the pleural cavity and provided with a valve. Ransohoff fits a very thin rubber tube around an ordinary drainage tube. Pus escapes readily but the suction effect of inspiration collapses the outer tube.

One form of valve, which probably has many cures to its credit, is the neglected pus soaked dressing. There is no doubt that a large number of patients, probably the majority, get well without complications, following ample rib resection and stiff tube drainage. Cotton writes, "I believe absolutely that most empyemas get well by accident, get well because a sloppy, pus-soaked gauze dressing is a very fair valve."

Seidel, in 1907, described an apparatus consisting of a glass hemisphere applied over the wound and the air exhausted by Perthes' water pump method. Nordmann, the same year, before a continental surgical congress, demonstrated an aspirating apparatus on the same order, and provided with a manometer and air pump. He claimed for his apparatus, portability and easily controlled degree of suction. It is cemented to the skin with colloidin or gum arabic, and may be left on from ten to twelve days. It is usually changed every three to four days. Suction the first day is kept at from 5 to 10 mm. mercury, the second day from 10 to 25 mm. Further rarefaction is regulated according to the patient's feeling of discomfort or pain. In acute empyema, from 120 to 150 mm. is reached in from one and one-half to two weeks; in chronic cases this amount is reached at once. From a mechanical point of view, this apparatus would seem efficiently to meet the requirements of a continuous negative pressure. Lawrow reports an elaborate study of nineteen acute cases treated with this apparatus. Aspiration was continued from twelve to seventy-four days, the average being thirty-five and one-half days. An average of eighty-eight days was the time required to effect a cure in his most favorable cases.

A critical evaluation of the comparative merits of these methods seems almost impossible. However, the fact is significant that no one of

them has been generally accepted as conspicuously superior.

Departures from the routine operative procedure have been made from time to time. Revilliod, in about 1890, according to Lawrow, advocated wide open thoracotomy, the removal of fibrin, and tight closure of the thorax to the drain. Lloyd, in 1896, reported the result of a similar radical operation in 225 cases, with a mortality of 20 per cent. Sauerbruch, in 1908, reported two cases of acute empyema in which operation was done under differential pressure and tight closure after evacuating the pus, with favorable results. Willy Meyer, on the contrary, operated on three patients in two of which pocketing occurred, necessitating a second operation. Fresh interest is attached to this treatment in view of the apparently successful tight closures, of leaking wounds, and of infected hemothorax at the battle front. Lilienthal has recently elaborated a modification of Lloyd's operation, which he calls major thoracotomy. It consists in general anesthesia, wide intercostal incision, rib spreading exposure, the "mobilizing" of the lung by the hand inside the thorax, freeing adhesions, and removing fibrin. The wound is closed tightly to rubber tissue wicks at the angles. In September, 1917, Lilienthal reported forty-four such operations with a mortality of 27.2 per cent. One-third of the operations were performed after a preliminary aspiration. The mortality in thirty-eight patients operated on by minor thoracotomy—ordinary rib resection or intercostal incision—was 18.4 per cent. No thoracoplasty was necessary in any of these cases. In the preceding ten years, 258 patients were operated on, with a mortality of 23 per cent. Collapsing thoracoplasties were performed in 15 per cent. of the cases. Lilienthal writes, "There have been a number of revisions, secondary and even tertiary, but eventually all patients—were sent home with symmetrical chests and fully expanded lungs." Whittemore, at the Massachusetts General Hospital, reports twelve cases, with one death in forty-eight hours from cerebral embolus. In two instances the lung did not fully expand. Whittemore operates under intratracheal anesthesia, which he believes materially aids in obtaining full lung expansion.

A revival of the generally discarded treatment of empyema with antiseptics was initiated with the Carrel-Dakin method. Before the Section on Thoracic Surgery at the meeting of the American Medical Association this year, Major Stewart of the War Demonstration Hospital of the Rockefeller Institute, reported cases of forty-four patients treated by this method. Ordinary rib resection was followed by the introduction of from

three to five Carrel tubes, rendered stiff by silver wire. An ordinary drainage tube was also used to carry off the surplus Dakin fluid. Instillations of from 30 to 100 c.c. in the first cases every two hours, then every hour during the day and every two hours at night, resulted in sterilization in from four to fourteen days. The wounds closed spontaneously or were sutured, the latter on an average of the fourteenth day. There were twelve deaths in the series, a mortality of 27 per cent. Variations have been made in technic and in the use of the Dakin solution, and favorable results have been reported by Campbell, De Page and Tuffier, and others.

The hemolytic streptococcus empyema epidemic during the past eight months in our cantonments, presents an apparently new aspect of the problem. Streptococcus empyema has not been uncommon in the past. In a series of 574 pleural exudates examined at the Mt. Sinai Hospital, streptococcus occurred in about 23 per cent. In this same series, of sixty-six cases of pneumococcus infections there were fourteen deaths. In thirty cases of streptococcus infections there were no deaths. The occurrence of hemolytic streptococcus is not mentioned. Except in tuberculous and actinomycetic infection, the treatment has, in the past, been but little influenced by the bacteriologic findings. In 1910 Robinson wrote, "Every unilateral empyema should be drained by an operation, whether the material obtained in diagnostic thoracentesis is pure pneumococcus, staphylococcus, streptococcus, or the three combined." In the hemolytic streptococcus infections in our cantonments it has been different. The frightful mortality from streptococcus empyema following measles and bronchopneumonia is known to all. From Camp Zachary Taylor, Hamburger and Mayers reported that of 388 cases of measles 77.1 per cent. were streptococcus carriers as determined by throat swabs. Of 162 hemolytic streptococcus carriers forty-five developed bronchopneumonia, 33 per cent. of whom had empyema. At the same camp, from the middle of December to the middle of January, there were 109 cases of pneumonia and fifty-two, almost 50 per cent. of empyema. Christmas week of that period eighteen cases of empyema developed, and in spite of treatment there were fifteen deaths. Many of the patients came in with a chest full of pus, that twenty-four hours before the x-ray had demonstrated to be free of fluid. Of eighty-six patients, twenty died, six were discharged to duty, and sixty remained under treatment at the time the report was written. Rib resection was found ineffectual. No patient having this type of treatment had left the hospital, while nine thus treated

were dead. Suction drainage gave the best results. The exploratory tap was followed in several instances by serious collapse, and there was one sudden death explained on the basis of vago sympathetic reflex. Following a change in technic in which .5 per cent. cocaine was used, and the pus withdrawn through the same needle, there were no further untoward symptoms of this kind. Some patients were worse twenty-four hours after aspiration, having rapid, thready pulse, drenching perspiration, clammy skin and other symptoms of overwhelming toxemia. This was attributed to the sudden withdrawal of too much fluid.

At Fort Riley, empyema occurred in 21 per cent. of 900 cases of pneumonia. Early operation resulted in a high mortality. Preliminary aspiration and intrapleural lavage lowered the mortality. Some patients recovered without operation. In such epidemics, therefore, the bacterial findings seem to be of great significance, not only from a diagnostic standpoint, but also from that of treatment. The variable hemolytic property of the streptococcus, with which apparently the virulence largely is associated, further makes the bacteriologic study far more complex than it has been believed. Questions of epidemiology of mutations in the organism, of when to aspirate and when to resect, of antiseptics, and of serum and vaccine therapy, render the treatment of this type of empyema anything but simple.

Some idea of the importance of traumatic empyema as seen at the battle front is gained from a consideration of the fact that three-fourths of all the chest wounds are penetrating in the sense that they pierce the parietal pleura. The grave probability of the development of sepsis is often alluded to. The battlefield of Flanders and of northern France is described as a sea of mud in winter and worse than a sandstorm in the desert in summer, and at no time has the contact between soil and soldier been more close and lingering. Bullets, and especially jagged shell fragments, carry in with them bits of skin and clothing plastered with this bacteria infected dirt, and infection would seem almost inevitable. Special conditions tending to the development of sepsis are open sucking wounds, present in 20 to 30 per cent. of the cases. These may become infected by direct extension. A second group of cases are those of a retained foreign body. In one series of 131 cases, there were seventy-four bullet wounds and fifty-seven shell wounds. About 20 per cent. of the bullets, and 50 per cent. of the shell fragments were retained. A third of the bullet wounds and almost three-fourths of the shell wounds become infected. A third group are

those with associated hemothorax. About two-thirds of the cases of penetrating wounds develop hemothorax, and about 25 per cent. of all cases of hemothorax, according to Elliot, become septic. In 153 of his own cases 40 per cent. were infected. The incubative period varies. Fulminating sepsis may develop in forty-eight hours. The onset of the symptoms is often gradual and insidious. The gross characteristics of the aspirated fluid is not a safe indicator as to whether or not the blood is sterile. The surest early sign of bacterial growth is a foul odor. The first puncture may fail to produce a growth. Elliot and Henry found that the first diagnostic puncture was negative in 50 per cent. of cases of anaerobic infection. Moynihan states that the upper part of the fluid may be sterile and the lower layers positive to culture.

Pocketing of the fluid also occurs. The gross characteristics of the fluid may be misleading. It may resemble normal blood and yet teem with bacteria. Anaerobic infection occurs in from 40 to 50 per cent., so that cultures must be made under both aerobic and anaerobic conditions. The bacteria are often of fecal origin. The prognosis has been bad. According to Elliot, 50 of 100 patients will die, and in seventeen of the fifty who survive the condition will become chronic. Of the remaining thirty-three, sixteen will be invalided six months or more. Only one out of eight has good prospects for immediate recovery.

Treatment under such conditions can hardly be too drastic, if curative. The aspiration of sterile hemothorax or thoracotomy, and turning out of clotted blood, lessens the incidence of sepsis. Early recognition and prompt, efficient drainage are imperative. The only means of making sure of infection in the absence of pus is by culture. In critically ill patients preliminary evacuation of pus by aspiration is advised. Both local and general anesthesia have their advocates. A few months since Moynihan wrote that Tuffier has modified, profoundly for the better, the treatment of these trying cases by adopting to their needs the Carrel-Dakin technic, as herein outlined. Dichloramin-T is considered by Carrel of less benefit because it does not dissolve the septic sloughing tissue. Eusol, Bipp, Flavine, etc., have also been used, followed in some cases by immediate tight closure of the chest without drainage. Of one series of twenty-nine cases so treated, in sixteen the chest remained closed. In these cases the patients are aspirated forty-eight hours after closure. It may be that the treatment of infection of the chest will shift to closure without preliminary antiseptics, as seems to be the case in the treatment of other war wounds. Thus Surgeon

General Sir Anthony Bowlby, in March of the present year writes, "At the last meeting of the Surgical Conference of the Allies in Paris, May, 1917, it was agreed that operation in some instances should be followed by primary closure of the wound, notably in case of wounded joints. But in the following November the conclusion arrived at was: Since our last session the disinfection of wounds has passed from the domain of the chemist to that of the surgeon. Primary suture has taken the place of secondary suture, and has become the method of choice."

In the treatment of infected hemothorax, Moynihan advocates wide open thoracotomy in order to wash out clots, remove the foreign body, disinfect the cavity, and establish drainage by a stab puncture, or small rib resection below. He says, "This is only to bring the treatment of wounds of the lung into line with that practiced elsewhere. The surgeon no longer allows infection to be well established in the wound; his aim is to attack by approved methods (the free opening of the wound, the excision of all dead or contaminated tissue, the removal of all fragments of clothing, of all projectiles and of all foreign bodies), and then to secure the earliest possible closure of the wound which remains. No less an ideal and no less scrupulous a practice would guide him also in the treatment of wounds of the lung and pleura. The time has gone by when he can justly allow infection to become deeply ingrained before adopting those tardy, incomplete, and often ineffective methods with which he has been too long content."

The question of the application of these principles to civil practice is an important one. The progress in abdominal surgery really began, as it is often pointed out, by letting in the light. The trend in the treatment of chest conditions in general, and of acute empyema in particular, is in this direction, and results thus far seem promising.

REFERENCES

1. Baylor, E. A. C.—Valvular Drainage Tubes in Empyema. *Brit. Med. Jour.*, 1899, Vol. i, pages 147-148.
2. Bergeat, E.—Ueber Thoraxresektion bei grossen veralteten Empyemen. *Beitr. zur klin. Chir.*, 1908, Vol. lvii, pages 373-512.
3. Boinet—Thoracocentese, sans aspiration, au moyen d'un drain a valves formant soupape. *Bull. de l'Acad. de med.*, 1903, 3.s., Vol. i, pages 94-98.
4. Bowlby, A.—Primary Suture of Wounds. *Brit. Med. Jour.*, 1918, Vol. i, pages 333-337.
5. Buelau, G.—Für die Heber-Drainage bei Behandlung des Empyema. *Ztschr. f. klin. Med.*, 1890-91, Vol. xviii, pages 31-45.
6. Cabot, A. T.—The Antiseptic Treatment of Empyema. *New York Med. Jour.*, 1880, Vol. xxxii, pages 136-140.
7. Campbell, J.—Treatment of Septic Haemothorax and Empyema. *Brit. Med. Jour.*, 1918, Vol. i, pages 109-110.
8. Cotton, F. J.—Pneumodynamics of Empyema. *Boston Med. and Surg. Jour.*, 1915, Vol. clxxiii, pages 804-808.
9. De Page, A.—Quoted by Moynihan.
10. Dieulafoy—Quoted by Lawrow.
11. Elliot, T. R. and Henry H.—Infection of Haemothorax by Anaerobic Gas-producing Bacilli. *Brit. Med. Jour.*, 1917, Vol. i, pages 413-420; 448-453.
12. Elliot, T. R.—Treatment of Chest Wounds. *Lancet*, Lond., 1917, Vol. ii, pages 371-377.

13. Hamburger, W. W. and Mayers, L. H.—Pneumonia and Empyema at Camp Zachary Taylor, Ky. A preliminary report. *Jour. Am. Med. Ass'n.*, 1918, Vol. lxx, pages 915-918.
14. The Genuine Works of Hippocrates. Vol. ii, page 768.
15. Holt, L. E.—The Siphon Treatment of Empyema in Infants and Young Children Compared with other Measures. A study of 154 cases. *Am. Med.*, 1913, n.s., Vol. viii, pages 381-389.
16. Hutton, W. M.—A Contribution to the Treatment of Empyema. *Brit. Med. Jour.*, 1898, Vol. ii, pages 1321-1322.
17. Kuster, E.—Geschichte der neuen deutschen Chirurgie, 1915, 110 pp. (Neue Deutsche Chir. Vol. xv.)
18. Lawrow, W.—Die chirurgische Behandlung des Pleuraempyems unter besonderer Berücksichtigung der Nachbehandlung mit Aspiration. *Beitr. z. klin. Chir.*, 1913, Vol. lxxxiii, pages 67-126.
19. Lilienthal, H.—Empyema. Exploration of the thorax with primary mobilization of the lung. *Ann. Surg.*, 1915, Vol. lxii, pages 309-314.
20. Lilienthal, H.—Empyema of the Thorax. Reports of one hundred cases treated in the surgical service of the writer, at Mt. Sinai Hospital. *Ann. Surg.*, 1917, Vol. lxvi, pages 290-294.
21. Lloyd, S.—The Surgical Treatment of Empyema. *Ann. Surg.*, 1907, Vol. xiv, pages 373-381.
22. Lund, F. B.—The Treatment of Chronic Empyema. *Boston Med. and Surg. Jour.*, 1915, Vol. clxxiii, pages 808-811.
23. Meyer, W.—Quoted by Robinson.
24. Moynihan, B.—III. Gunshot Wounds of the Lung and Pleura. *Surg., Gynec., and Obst.*, 1917, Vol. xxv, pages 605-612.
25. Perthes, G.—Erfahrungen bei der Behandlung des Empyems der Pleura. *Mitt. a.d. Grenzgeb. d. med.u. Chir.*, 1901, Vol. vii, pages 581-643.
26. Playfair—Quoted by Lawrow.
27. Potain—Quoted by Lawrow.
28. Ransohoff—Quoted by Lund.
29. Revilliod, L.—Quoted by Lawrow.
30. Robinson, S.—Thoracic Surgery. *Boston Med. and Surg. Jour.*, 1910, Vol. clxiii, pages 914-918.
31. Robinson, S.—Acute Thoracic Empyema. Avoidance of chronic empyema. Rib trephining for suction drainage. *Boston Med. and Surg. Jour.*, 1910, Vol. clxiii, pages 561-570.
32. Roth, I. R.—A New Bed Device for Facilitating the Drainage of Empyema Thoracis. *Jour. Am. Med. Ass'n.*, 1918, Vol. lxx, pages 1455-1456.
33. Sauerbruch—Quoted by Robinson.
34. Schmidt, E.—Heberdrainage mit aspiration zur Behandlung tuberkulöser Pleuraempyema. *Munch. med. Wchnschr.*, 1909, Vol. i, pages 752-753.
35. Seidel—Quoted by Lawrow.
36. Stewart, G. A.—Treatment of Empyema by the Carrel-Dakin Method at the War Demonstration Hospital, the Rockefeller Institute for Med. Res., (Preliminary Report). *Med. Rec.*, 1918, Vol. xciv, pages 236-237.
37. Tuffier—Quoted by Moynihan.
38. Ware, M. W.—The Trend of Surgery in Empyema of Thorax. *Ann. Surg.*, 1917, Vol. lxv, pages 320-325.
39. Whittemore, W.—The Surgical Treatment of Empyema. *Boston Med. and Surg. Jour.*, 1918, Vol. clxxviii, pages 360-364.
40. Williams, W.—Valvular Drainage Tubes in Empyema. *Brit. Med. Jour.*, 1900, Vol. i, pages 72-73.

PLASTIC SURGERY OF THE FACE AND NECK*

J. H. McGREADY, M.D., Independence

Plastic surgery was first practiced so long ago that the date of its origin cannot be accurately established.

Centuries followed in which the art seemed lost to literature. The ancient Hindus are credited with having performed plastic operations two thousand years ago. Rhino-plastic methods are described in Susrata's Ayur Veda, the exact period of which is unknown. It is mentioned in *Da Medicina*—the surgical Bible of Celsus.

In 1442 Branca, a Sicilian surgeon gained repute for building noses from the skin of the face. His son, Antonio Branca wrote on the subject in 1460. After the lapse of a century Kaspar Tagliacozzi—1546-1599—established the art of rhinoplasty on a firm basis, his pupils pub-

lishing in 1597 the first authentic volume in restorative surgery. Another century passed without scientific recognition, when in 1794 there came a report from Poonah, India, of a case performed by the Koomas, a colony of potters or, as said by some, a religious sect. The patient was a follower of the English army who suffered nose amputation as a retributive punishment and was befriended by the Koomas. The operation was made by turning down a flap from the forehead, which was held in place by a sort of clay. Much to the astonishment of the English officers the result was successful and the case was reported by Pennant in England. Within a few years the work was taken up by English, French, and later by German surgeons and from then until the present day the record is replete with ingenious methods of procedure, until the entire field of anaplastic surgery furnishes a fascinating subject for study and investigation.

In its evolution the skin grafts of Riverdin, Thiersch, Wolf, Ehrenried's flap graft and their numberless modifications are well known. Materials have been taken from animals, other human beings or cadavers as seemed to meet the occasion's demand and there have been used many epithelial perversions such as warts, corns, epithelial scrapings and also egg membrane and blister skin. There has been the widest latitude in procedure, since the standardization of cases is impossible and individualization necessary, the surgeon was governed only by anatomic necessity in the desire to obtain a practical result. The various operations are easily identified for it seems to have been the custom for an operator to confer his name upon his method.

Plastic surgery as related to the face and neck has for its objects restoration of defects due to trauma, neoplastic excision and errors of development; palliation of incurable malignant processes and the correction of malformations for cosmetic purposes.

The present war has added wonderful impetus to the study of restorative consideration. It seems to be a recognized fact that a mere practical result is not sufficient in dealing with war wounds; on the basis of fairness, restoration of contour must be dealt with as well as closure of the defect. The almost universal desire of a patient to know what the ultimate result will "look like" and the truth that a man wounded in his country's service has a right to the best his country can give in return, warrants the contention that appearance must be considered in the result as well as usefulness. The operations necessary to palliate the suffering of those afflicted with

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 9, 10, 11, 1918.

incurable malignancies seem justified by the work of Bainbridge. He maintains this statement by the humanitarian suggestion that the disheartening disfigurement is not added to the burdens of a sufferer from cancer, and in favorable results of his drastic treatment of the disease the patients are made comfortable and presentable.

Plastic operations for cosmetic purposes belong very properly in a class by themselves. In these cases the surgical procedure is primary and is done under most favorable circumstances, being an operation of election. It is interesting to note in this connection that there is in vogue at the present time in Japan a desire to have the palpebral fissure straightened from the almond slant position. Hydro-carbon prostheses belong to the realm of the "beauty specialist" rather than to that of the surgeon. Cancer, syphilis and tuberculosis quite largely influence the possibilities in plastics. To these are added the cases in which the foundation of repair work must be laid on the result of burns. The very old, in whom defects occur from epitheliomas are fitted with prostheses to fit about the nose and orbit when it is inadvisable to attempt plastic repair. Lupus of the chin has been successfully treated by excision, and repair made by turning up a flap from the neck. Lupus of the nose has been successfully treated by excision and free transplants.

Since no plastic operation can suffer from reasonable delay, none need ever be attempted in the presence of active syphilis.

In all that has been written on plastic surgery very little of technical detail has been given. Few operations which failed of their object have been reported, and the reasons for failure have therefore been discussed little or not at all. Since it is seldom that identical cases occur and nearly every case demands individual consideration or makes necessary special measures, few cardinal principles have been laid down in this branch of surgery.

Infection is the greatest factor in unsuccessful cases. The irremovable infections normally present in the orbit, nose and mouth are held of little consequence because of the tolerance developed by the tissue in these regions by their long existence. Suppurating lachrymal sacs, damaged antra, sequestra or infection of the teeth are conditions which must be eliminated.

Wounds with severe, persistent infections and the resultant production of large masses of dense tough fibrous tissue are unfavorable cases until prepared by the removal of both. This formidable obstacle occurs constantly in war wounds,

and plastics are foredoomed unless the infection and scar tissue are effectually removed.

Stress is given to the treatment of underlying deep tissues. Gaps or cavities are filled by undercutting the wound edges, bringing them together by suture so as to form a ridge which brings the line of suture up to or a little above the surface. The mobility of the deep structures is of great importance. Attachment of the skin suture line to bone through a block of fibrous tissue inevitably terminates in a depressed scar. It is necessary that the gap be filled and the skin sutured independently. Tension on flaps or on the line of suture must be avoided. Adequate blood supply in the transposed flap is a matter of anatomy. Horsely recently described a unique operation in which a flap is turned down from the temporal region beneath a tunnel flap to the cheek. The anterior temporal artery is loosened from its bed and carried outward and forward in a new channel, with the transposed integument. Some little annoyance developed from over supply of blood in the flap, evidenced by cyanosis. The edges of the transplant required to be pared to relieve the excess until new venules became formed.

Accurate apposition of skin margins and their suture without tension or the use of plates must be observed to guarantee success.

Esser holds that the foundation of a plastic must be suitable; the muscles of expression must be considered; fat tissue must be provided and the skin to be used must be chosen so that it closely resembles that of the skin area to be covered in color, shade, elasticity, hair, thickness, fibre direction, number and size of pores; in short, in all its qualities.

Simplicity of procedure must be followed and tissues transferred with a minimum of operative trauma.

Defects requiring skeletal repair bear a larger significance in operative work. Reconstruction of defects in the nose and jaw are being most satisfactorily done with grafts of cartilage. It has been found that cartilage will attach itself to bone as well as bone to bone; it will resist mild forms of sepsis; and it will not disappear, as does bone, when unattached.

It is generally recognized that open dressings are most favorable for operations around the face. A dusting powder of calomel or boric acid meets the requirements. The effect of sunlight and air limits infection and the absence of applied dressing makes frequent inspection possible with a minimum of wound disturbance. Immobilization of the operative site is necessary and

in this there must be the closest co-operation on the part of the patient.

The work of Aymard, Pont, Morestin, and Esser have stimulated interest in plastic surgery to the end that certain fundamental principles may be evolved and the simplicity of procedure recognized.

It is certain that the present world crisis will bring a heavy obligation upon surgeons adept in this field whose skill, in the language of Kolle, permits of many almost unbelievable corrections of defects that would evoke the pity and too often the aversion of the on-looker, especially if these occur in the face of those who have become marred in birth or age, by accident or disease.

MYOCARDITIS—ITS RECOGNITION AND TREATMENT*

J. R. WALKER, M.D., Fort Madison

The most important muscle structure of the human body is the myocardium, a muscle until recently poorly understood, chemically or pathologically. Today no one treats a disease without considering circulation, no one should administer a drug without considering what it will do to a patient's heart.

Before considering the recognition of myocarditis, I want to present three, or four of the chief pathological changes occurring in the myocardium as follows:

I. *Simple and Brown Atrophy*—In both, the muscle fibers become smaller, and the entire heart decreases in size. The heart presents a brownish appearance due to pigment found in the sarcoplasm. Both types, simple and brown atrophy occur in inanition, and the various cachetic states. Brown atrophy especially is regarded as a senile change.

II. *Parenchymatous Degeneration*—Microscopically this is marked by cloudy swelling. Macroscopically, the muscle presents an opaque, dark red, somewhat spotted appearance and is softer and more friable than the normal muscle. This degeneration frequently accompanies infectious fevers and biological and chemical poisons. It is also found in severe anemia.

III. *Fatty Degeneration*—This usually represents a later development of parenchymatous degeneration, although it may exist primarily. Depending on its severity the myocardium is studded with fat droplets of various size, macroscopically the muscle shows patchy or diffuse yellow areas,

when the damage is extreme the muscle is flabby, friable and grayish in color. Very many factors alter the quality and quantity of the blood which cause fatty degeneration. For example it is found in severe primary anemias, in anemia following hemorrhage, in infectious diseases, in chemical intoxications (phosphorous, arsenic, and alcohol), in coronary diseases, in cardiac hypertrophy, and in chronic nephritis.

IV. *The Fatty Heart*—Fatty degeneration, is very different from fatty heart. In the latter the heart is covered by more or less extensive fat pads, sometimes these fat masses insinuate themselves between muscle bundles and appear as fat clumps under the endocardium. Fatty hearts are usually the accompaniment of fat accumulations in other parts of the body, in obese and thick individuals.

V. Disturbances of circulation give rise to myocardial changes. This is true of focal anemia interfering with coronary circulation from emboli in the main coronaries, or from coronary endarteritis, either of these may stop the arterial supply. Following the complete obstruction of one of the coronaries, the area around it becomes pale, and undergoes coagulation necrosis. In rare instances these softened areas develop into aneurisms of the cardiac wall. A more frequent outcome however, is organization of the obstruction, the necrotic material is absorbed, and vascularized granulation tissue takes its place, this ends in fibrous myocarditis, and finally in scar tissue.

As a result of bacterial infection, in which a clump forms the inflammatory obstruction, an area of cloudy swelling, necrosis, and fatty degeneration of the muscle is developed, the necrotic area becomes infiltrated with leucocytes. If the leucocytes penetrate the necrotic zone an abscess develops. These abscesses are usually minute, though by confluence they may sometimes be seen by the naked eye.

Small abscesses end in scar tissue formation by destruction of bacteria and liquefaction and absorption of the pus cells, the defect is then covered by granulation tissue coming from the surrounding musculature. On the other hand these foci may cause purulent pericarditis besides ulcerative myocarditis. In these inflammation which stop short of abscess formation, the process ends in the production of granulation, of young connective tissue, and finally of scar tissue. As the name denotes the pathological change in myocarditis is exceeding variable. It depends upon the amount and type of other concomitant diseases affecting the kidney and general arterial structure.

*Read by title, Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 8, 9, 10, 1918.

From a description of the pathological changes found in myocarditis it becomes apparent that the symptomatology must be a varied one, and to a great extent, must depend upon the type and extent of the pathological process, it is important to remember that the diagnosis of myocarditis alone is often extremely difficult or impossible. Often the diagnosis must be made from the symptoms of myocardial insufficiency. Myocarditis rarely exists as an isolated pathological lesion. It is usually combined to a varying degree with cardio-sclerosis a somewhat generic but convenient term which has appeared in recent literature and clinical medicine. The physical signs of which, are much more definite and more readily recognized than of myocarditis alone.

The physical signs of myocarditis as an isolated entity, may be limited to some evidence of enlargement of the heart or in advanced cases of severe degeneration to weakness of the first sound at the base and apex and to weakness or entire absence of the second especially at the base. From the physical examination alone it may not be possible to venture more than a guess as to its extent or even the presence of any myocardial damage. When considered however, in conjunction with such other data as furnished by the etiological factor, the size of the heart, the condition of the palpable arteries, the absence of valvular disease, the presence of muffled and indistinct cardiac sounds, moderate tachycardia with dyspnea, the subjective and objective phenomena of myocardial insufficiency. It may be possible to state with a fair amount of accuracy the extent of myocardial disease. It is clear then that the diagnoses must often be established inferentially and by exclusion. The onset and crises of acute fevers are frequently marked by extra systoles, which are generally regarded as toxic myocarditis. But the relation seems doubtful for you will find this premature contraction of the heart in many cases which are not toxic. In slight cases of la grippe or mild throat cases where the patient scarcely feels ill there is no circulatory symptoms. Clinically it seems probable that these extra systoles are due to abnormal products flowing in the general circulation affecting the cardio-inhibitory centers and not the myocardium.

Alcohol attacks, particularly the cardiac musculature, the result is myocardial disease varying from slight fatty degeneration to slight tissue formation. In metallic poisoning we have a myocardial degeneration but whether or not it is primary or secondary to diseases of the coronary arteries is still unsettled. The selective action of metals on the arterial system seems to indicate that myocarditis results secondarily from vascu-

lar disease. Hypertrophic and enlarged hearts in which myocarditis is an important factor is often not diagnosed because the impaired condition of the circulation is such that the usual vigorous unhampered action indicative of hypertrophy is absent. The diagnosis must then depend on the data indicated in the physical signs of myocarditis.

Much experimental and clinical work has recently been done to show that the various organisms in the mouth producing pyorrhoea may by a systemic absorption cause myocarditis.

We are greatly indebted to the dental profession for indicating the teeth as the cause of myocarditis and endocarditis. But the physician must finally judge all the evidence in every case before he can decide whether the cause is in the mouth or elsewhere.

The correlation between pyorrhoea alveolaris and cardiac disease cannot be established through examinations of the mouth for carious teeth, for periostitis and for pyorrhoea alone, but a careful search of the entire body must be made for other possible infective foci which may cause cardiovascular disease, cystitis, cholecystitis, deep seated bone abscesses; pyelitis, are some of these bacterial conditions, so that, should the most careful investigation disclose a root abscess it is for the clinician to decide from his history the type and probable duration of the cardiovascular disease and from complete examination of all other possible infections what weight etiologically should be given to the presence of the root abscess as the causative agent of the heart lesion. It appears to me that the claims now made for the extremely frequent connection between oral infections and heart disease is unwarranted, at least should be investigated with great care.

Of all diseases, rheumatism is the most frequent cause of valvular disease. Myocarditis which follows less frequently than endocarditis, usually occurs in the form of inflammatory nodes and permanent damage always results, but here as well as elsewhere in the body if the infective process stops early, scar tissue may form before clinical signs of myocarditis present themselves, and necropsy alone can give evidence of the cardiac damage, for the patient may remain clinically well. In myocarditis with hypertensive cardiovascular disease the systolic blood-pressure commonly varies from 180 to 230, m.m. Average being 190 to 200, it is important to note that there may exist no parallelism between the degree of hypertension and the extent of kidney or heart involvement and that hypertension alone need not be necessarily of symptomatic or prog-

nostic importance. The average diastolic pressure of this group is about 100 m.m. If renal involvement predominates and diastolic pressure of 120 or over are found, another group of cases with myocardial insufficiency and hypertension consists principally of patients past middle life with only moderate hypertension and with normal diastolic pressure. The chief characteristic of the blood-pressure is its marked variation, being as much as 30 m.m. The symptoms referable to myocardial insufficiency are mild, the patients are usually stout or obese men. The prominent physical signs in the chest are those of bronchitis and emphysema. The palpable arteries are not thickened and nephritic symptoms are not marked despite the fact that a small amount of albumen and casts are present in the urine. Pretibial edema is absent or only very slight. If renal complication are sufficient to produce uremia, we have cerebral symptoms as headache, nausea, vomiting, varying grade of pallor, attacks of dyspnea, and precordial distress.

It has recently been stated that the differentiation in types of cerebral or cardiac hypertension can be made by careful observance of diastolic pressure, in cerebral cases diastolic pressure is 120 to 140 while the cardiac pressure is much less. In patients in whom myocarditis is the predominant pathological condition, show little or no hypertention, the diastolic pressure is sometimes quite low, so that, with a normal systolic pressure there is an increase in the pulse pressure, hence in the cardiac load.

In myocarditis with valvular lesion, especially aortic reg. the blood-pressure is very high between 180 and 200. Diastolic pressure abnormally low, average 40 to 25, sometimes to zero. In this lesion the systolic blood-pressure in the femoral is often much higher than in the brachial. Sometimes as high as 50 m.m. The normal difference between the arm and leg is from five to ten, hence the importance of measuring the arm and leg blood-pressure in a myocarditis with a suspected aortic lesion.

The general prognosis depends upon an attempt to gauge the rate of development and extent of cardiosclerotic damage and the actual degree of myocardial insufficiency. The first is obtained by a careful inquiry into the onset of the symptoms. From these the duration of the disease may be estimated; for example, one severe case of myocarditic in a patient (fifty-five years old) that fact was established that the disease started with a mild nephritis following la grippe (twenty years) previously.

This the patient had entirely overlooked as being of no significance. Very slight cardiac symp-

toms appeared fifteen-years before, and at the time of examination it appeared that the pathological damage must have been done long before the symptoms, for the entire history spoke for a steady gradual continuation of the pathological mischief. This case will illustrate the necessity of obtaining a careful clinical history. The degree of myocarditis is gauged by the physical signs and clinical manifestation, which are, dyspnoes, precordial distress, and exhaustion after effort. In view of the fact that the symptoms of myocarditis are often very indefinite we should be on our guard, for most acute infections result in myocarditis, and it is likely that serious illness, of long duration will cause cardiac muscle disturbance with acute myocarditis developing. After any illness we may expect to find the apex beat less positive, less accentuated, and later it becomes diffuse and even feeble, closure of aortic valve less typically sharp showing that the blood-vessels are not so thoroughly filled. The peripheral circulation is not so active, the blood-pressure falls and the heart becomes more rapid especially on the least exertion. All of these indicate myocardial weakness and the treatment is largely preventive. We should remember that prolonged fevers, prolonged insufficient or improper food, prolonged acute pain, and especially prolonged septic process will always cause myocarditis.

It should also be remembered that after ether or chloroform anesthesia, especially after chloroform, the heart muscle may be disturbed and tonicity be lost, therefore after anesthesia, after operations, after all illness that has lasted more than a few days, the convalescence of the patient must be deliberate. Sudden rising, sudden erect posture, exertion of walking too early, going up stairs too early or taking moderate and later severe exercise too early, may cause acute dilatation of the weakened heart muscle. If myocarditis is known to be present, cardiac tonics such as digitalis and strychnia should not be given. Vasoconstrictors should not be given, large amounts of liquid or food should not be taken into the stomach. Karel diet should be given every third day. Massage should be inaugurated early to improve, and to promote circulation. The best hypnotic if one is needed is morphine in small doses. If there is weakening perspirations atropin should be given, as it is also a circulatory stimulant. Calcium in almost any form seems to be of value in the majority of these heart cases, it is a sedative to the nervous system, and is certainly indicated in myocarditis. Calcium lactate is perhaps the best salt to administer, four grains four times a day.

In chronic myocarditis we have a different picture. It occurs mostly in people past middle life, and quite often is not primarily associated with rheumatic or valvular disease of the heart. It is really a degenerative process, with development of connective tissue, a fibrosis and cardiosclerosis. In many cases this fibrosis is associated with fat deposits or fatty degeneration. The principal cause of this degeneration is old age, or premature old age, caused by various conditions.

Causes recognized are syphilis, gout, excess in the use of alcohol, tobacco, over use of tea and coffee, general over-eating, excessive physical labor, athletic work, and some cases are attributed to prolonged anxiety and worry.

The symptoms are progressive weakness, slight at first, noticed on exertion, evidenced by slight palpitation, slight shortness of breath, leg weariness and mental tire. The heart frequently becomes more rapid on the least physical exertion, slight cardiac stimulants as coffee, affect the heart more than previously, high blood-pressure becomes lower, pulse may be intermittent or even irregular. Not infrequently a heart suffering from fibrosis acts perfectly until some sudden exertion, as lifting, running or a serious illness causes it to suddenly become weak and it never again regains its former strength. Slight cardiac pains and sensation referred to the cardiac regions become frequent. Disliking to lie on the left side, when previously the patient has been able to sleep on this side without discomfort, is an evidence of cardiac disturbance. There is no pain but the patient becomes conscious perhaps the first time in life that he could have trouble with his heart.

The general advice he should receive is, avoid physical efforts, avoid mental tire, avoid over-eating and over-drinking, reduce or abstain from alcohol, coffee, tea, and tobacco. To take frequent warm baths to promote the secretions and the circulation in the skin and to take such daily exercise as seems advisable. If the iodides are indicated they should be given in small doses and continued for a long time, iodides tend to prevent the progress of connective tissue formation. Whether nitroglycerine or other nitrates are advisable depends on the peripheral blood-pressure. If this is low, or not higher than normal its use would be inadvisable.

If in spite of this treatment the patient continues to have cardiac attacks with or without pain, especially if there is some pretibial edema, the question arises as to whether or not digitalis should be given. In such cases one cannot tell without trying it. A small dose of an active preparation should be given, at first twice in twenty-four

hours. After about a week, once in twenty-four hours, its action being watched very carefully. It may do a great amount of good, or it may increase the cardiac pain.

An exact prognosis in this particular cardiac trouble is impossible, unless we have complications which are easily recognized, and in which we can to a certainty foretell the ending. We do not know how far an acute myocarditis may progress and entire recovery take place, neither do we know how slight a myocarditis may cause serious symptoms.

Clinically we know that many patients after serious illness never again have perfect circulatory strength. Other patients almost die of heart failure, and yet apparently absolutely recover their ability to do hard physical work.

PREVENTION OF POST-OPERATIVE THROMBOSIS AND EMBOLISM

Dr. Frederick McCann of London in March number of the British Medical Journal reviews some of the questions in relation to the cause of post-operative thrombosis and embolism. After admitting the influence of infection in causing this accident he shows that there is no constant relations between infected cases and the strictly aseptic cases and proceeds to explain his theory which is that transfixion of tissues in securing hemostasis is the predisposing cause. That the ligature may be of doubtful asepticity or becomes subsequently infected and the natural processes of coagulation is arrested, the clot liquifying and becoming detached in portions or in its entirety.

Dr. McCann believes that if transfixion in vascular areas was discontinued and a careful ligation of individual vessels with fine ligature material employed past-operative thrombosis and embolism would reach the vanishing point. He especially condemns using transfixion of omental tissues in securing hemostasis or any such procedure in hysterectomy. He advises if a vessel has been punctured the ligature should be withdrawn and the vessel clamped and tied after removal of the blood clot. He suggests the object of a ligature is to approximate the coats of a vessel and to keep them in opposition, not to cut them.

ONLY ONE ARMY

Uncle Sam now has but one army—the United States Army. It includes all the land forces in the service. All such distinctive appellations as Regular Army, Reserve Corps, National Army, and National Guard are eliminated by the War Department. The insignia formerly prescribed for the regulars shall hereafter be worn by the United States Army. The new 19th Division, to be trained here, will be a U. S. Army division, and the old 88th National Army division, which just left Dodge, loses its identity as a National Army organization.



DR. FRANCIS EDMUND WHITLEY

Born February 23, 1857

Died July 25, 1918

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa

Publication Committee

D. S. FAIRCHILD.....Clinton, Iowa
W. L. BIERRING.....Des Moines, Iowa
C. P. HOWARD.....Iowa City, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa
T. E. POWERS.....Clarinda, Iowa
W. B. SMALL.....Waterloo, Iowa

SUBSCRIPTION \$2.00 PER YEAR

Books for review and society notes, to Dr. D. S. Fairchild, Clinton. All applications and contracts for advertising to Dr. T. B. Throckmorton, Des Moines.

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII September 15, 1918 No. 9

VOLUNTEER MEDICAL SERVICE CORPS

In this number will be found an important communication from the War Department in relation to the enlistment of medical men for the service of the state, either in the Army or for service at home. The government is no less interested in the welfare of the civil population than of the soldiers, for we have to consider conditions after the war. The maintenance of public health at the highest standard possible, and the care of those who stay at home and bear many burdens, are of vital importance. It may be conceded that service in the Army stands first in the eyes of the public, and occupies first place in the matter of personal fitness, ability and courage, but it should be remembered that loyal and faithful service to the home population should have its rewards in public esteem and appreciation. But the man who stays at home for selfish and profiteering reasons, because there is an opportunity to get the profits "while they are going" is only entitled to public contempt, which will certainly be his reward in the time to come. The young man who feels that he is not mentally equipped for the exactions of military service, is to be commended if he stays at home, for it will clearly be to his advantage as well as to the service if he does. There is certainly a wide difference between the conscientious and loyal physician who feels for one reason or another that he ought to stay at home, and serve in one way or another the civil population with or without pecuniary advantage, and the physician who sees

a fat field that can be cultivated to his own personal interest.

The war is growing in intensity and the world will need all its resources; its best men must take the field; the old men, the physically unfit, and the women must as far as possible take their places. But a consideration of the future must show the need of maintaining our schools, agriculture, and industries at such a degree of activity as to prevent suffering and decay, for we have a reckoning to make at no distant day. The government in its wisdom is arranging a plan to provide for its armies and also for civil national integrity and we should thoughtfully consider the fact and lend our most hearty cooperation.

THE DEATH OF DR. F. E. WHITLEY

The death of Dr. F. E. Whitley removed another of the few remaining land marks that separates those who knew nothing of what is called modern medicine and those whose knowledge does not go back of laboratory and clinical methods. When the passing generation first entered the field of medicine there was little or nothing known of bacteriology and infections; laboratories and instruments of precision were unknown in their relations to medicine. Students of medicine served three years in a preceptors office, and were required to attend two terms of lectures in a reputable medical school of from sixteen to twenty weeks each. This was the equipment of a medical practitioner of thirty or forty years ago. New methods came, traditions were slowly cast aside and the older practitioner became the enthusiastic pioneer of the new and modern methods. Thus it came about that the old doctor bringing to bear at the bedside, training and close logical observation, together with revelations of the laboratory and instruments of precision, gained an advantage over a younger generation that has not generally been appreciated except by the few who had the advantage of a close relation to the men who are passing to new fields.

Dr. Whitley was one of the number who believed that no limitations could be placed on medical progress and while not a worker himself in scientific fields was able to appreciate the value of the work of others and utilize it for the benefit of his patients.

Dr. Whitley was an ideal family physician, patient, faithful, kindly in his manners, and had the rare faculty of bringing to the bedside a degree of cheerfulness, faith and courage more helpful than his drugs. He was a conservative practitioner avoiding ill considered radical measures,

never hesitating to bring to his aid the well considered opinions of others in times of trial. It was the writer's privilege to know Dr. Whitley intimately from the time he began practice in Webster City to the time of his death and often sat with him at the bedside of his patient, and thus came to know of his devotion to his patients and to his profession.

Francis Edmund Whitley was born in Chautauqua County, New York, February 23, 1857, a son of J. and Sarah Whitley, who came from England and settled in that section of the Empire state. He received his primary education in the Jamestown (New York) Collegiate Institute, from which he was graduated in 1875, and then supplemented this by a two years' course in the Cedar Valley Seminary.

Determining to study medicine, he set about the acquirement of the first and most important requisite for success, a thorough education. Entering Rush Medical College of Chicago, he received his degree of M.D. from that institution in 1881 and immediately afterward in the Chicago Polyclinic. Besides this he did other important post-graduate work and when he finally began practicing had a splendid equipment and training.

Coming to Iowa, Dr. Whitley first located at Traer, where he spent six years before settling in Webster City. Here he has been active for nearly thirty-five years. Was a member of the District Medical Association, and was ex-president; vice-president in the Hamilton County Medical Association; also an ex-president, member of the Iowa Medical Association and the American Medical Association; trustee for the hospital for the insane at Independence for seven years, and to the time of his death a member of the board of commissioners of insanity for Hamilton county. He was local surgeon for the Chicago & Northwestern Railroad. Membership in the American Association of Railroad Surgeons and in the Surgical Association of the Chicago & Northwestern Railroad. He was also for many years examining surgeon for Company C, Iowa National Guard, and since the declaration of war, has been the medical member of the local draft board.

On January 2, 1883, Dr. Whitley was united in marriage to Miss Cora Call, daughter of Rev. and Mrs. L. N. Call of this city. They have three children—Mrs. Varick C. Crosley, Webster City; Mrs. Max Hemingway, Fort Dodge, and Sergeant Major Guyon C. Whitley, in military service and stationed at Camp Cody.

Mrs. Whitley is State Chairman of the Woman's Committee of the Council of National Defense.

MEDICAL MEN IN TRAINING

Nearly fifteen thousand medical men, most of them young and nearly all connected with hospitals in one capacity or another, are now in military training camps, cantonments, and with troops in the field, to be fitted for military service in the war. These are the men who are to be the leaders in the medical profession of the next generation. Nearly all of them are back at the very first principles of education and training. Many of them are under grizzled campaigners of the regular army, men who obey their superiors without question, and who expect the same obedience from those under them.

Out in the training camps these men are occupying barracks; their insignia of rank are put away; they sweep out, clean up the premises about the camps, scrub and oil the floors, make beds, and do all the menial duties of the orderly, or the domestic—or the pupil nurse. They practice "setting up" exercises; drill in squads, platoons, companies, and battalions; practice equestrianism—that is, cavalry movements and riding. They answer reveille at 5:30 o'clock on these cold winter mornings, make the fires in their own barracks, and until "taps" at 9:30 p. m. they have never a single minute they can call their own.

After their days of training are over they will go to the war, where the slaughter of men is dull routine and where discipline regulates even their heart beats. What is all this to mean to the hospitals of this country and to the public when the great "muster out" comes and the profession comes home again, forsaking the sword to take up the plow?

We have been a terribly pampered and luxury loving people. Our young doctors have been taught to expect service from others—what, when they are trained to serve, when discipline is their second nature, and when "orders" are a fetish? In that day the standardization of hospitals will be automatic; rules will have the force of "orders," and "service" will be the apotheosis of medicine. In that day we shall know that the war has been worth all it has cost. And this same experience, with like results, will have saturated every stratum of society, every trade and profession, and every living soul of us. And we shall be a century ahead.

Exchange.

PROFESSOR POZZI

His recent tragic death will call to mind the courteous treatment extended by Professor Pozzi to American students in Paris. Particularly a group of American surgeons who attended his

clinics in 1913, at Hospital Broca. Professor Pozzi spoke English fluently and during a brief waiting for a patient took occasion to say that American students need not come to Europe to study surgery as the opportunities in America were equally good at least and that in fact the greatest surgeons in the world were in America and mentioned a few by name. We little thought then how soon many American surgeons would go to Europe to practice war surgery.

The distinguished French surgeon and gynecologist, Professor Pozzi, was fatally shot on June 13 in his consulting room in Paris by a lunatic patient.

Samuel Jean Pozzi was born at Bergerac (Dordogne) in 1846. He was educated at the lycees of Pau and Bordeaux, becoming a student of medicine in Paris in 1869, where he was an apt pupil of Paul Broca. His early academic successes obtained him the title of *agregé* in 1877, and six years later he was appointed surgeon to the Hospital de Lourcine which, after Broca's death, became known by his name. At this time he devoted himself mainly to gynecology, and in 1901 was elected to the chair in this subject founded by the City of Paris. Being charged by the French government at different times with scientific missions to Germany, England, Italy, Austria, and the United States, he soon acquired a world-wide reputation. From 1885 to 1894 he acted as secretary-general of the French Congress of Surgery, and in 1895 was elected to the Academy of Medicine. In 1898 he became a senator, and added to his reputation that of an able man of affairs. Other honours naturally followed. He became president of the Surgical Society of Paris, of the Congress of Gynecology which met at Marseilles in 1898, and he was one of the vice-presidents at the Paris International Congress of Gynecology in 1900. He was an honorary Fellow of the Royal College of Surgeons of England and an officer of the Legion of Honour.

Professor Pozzi had a well-deserved reputation as a teacher. He held for many years the leading place among French gynecologists, and did much for that branch of medicine both from its medical and surgical aspects. Gowned in a white overall and wearing a black cap of Florentine fashion, he was a picturesque figure as he toured his wards with assistants and students, and not infrequently followed by a number of interested visitors. A man of natural charm, he was specially attentive to the foreigner who wished to follow his clinical practice.

Professor Pozzi was a prolific and fruitful writer. After his M.D. thesis on pelvic fistulæ,

his first published work was on the subject with which his name is still chiefly associated, viz., "The Value of Hysterectomy in Fibrous Tumour of the Uterus," (Paris, 1875). Other early works dealt with amputation wounds, cerebral localization, and sclerosis of the convolutions in mental disease. His famous text-book on "Clinical and Operative Gynecology" first appeared in 1890, was translated by the New Sydenham Society (1892-93), appeared in American form edited by Brooks H. Wells (1892), in German edition with a preface by P. Muller, and in Russian (1897) in association with Voff. He was founder and for many years director of the *Revue de Gynecologie et de Chirurgie Abdominale*, a richly illustrated journal containing abstracts of home and foreign original work. Fond of antiquarian studies in general, and a collector of coins and statuettes, he was a keen student of the history of medicine, and to him we owe the reasoned conclusion that the last illness of Princess Henrietta, daughter of King Charles I. of England was due to a ruptured extra-uterine pregnancy in the first or second month.

Professor Pozzi was, as already noted, a great traveler on behalf of official gynecology. He was present at the annual meeting of the British Medical Association at Sheffield in 1908. Introducing there a discussion on uterine displacements. He remained highly receptive of new ideas from whatever quarter, and after a visit to New York in 1909 returned much impressed by the transplantations of organs and tissues accomplished by Dr. Carrel at the Rockefeller Institute. One of his most recent addresses dealt with the hospital of the future, in which he drew on the abundant material collected on his travels. He was firmly impressed with the value of simplicity and adaptability, and recommended the use and construction of buildings which could be demolished without hesitation to be replaced by others of more recent ideas. The qualities which we have here briefly sketched made Professor Pozzi a figure in international medicine.

A PORT IN FRANCE, Friday. Our army medical officers are enthusiastic over the opportunities given them for studying their profession in the American army hospitals in France. This is by collaboration and consultations with one another. The rather extraordinary feature of this is that, while they get experience in their profession over here, they all say that American hospitals at home ought to be modelled on the lines of the American army hospitals in France.

Major R. C. Cabot, chief of the Medical Service, at Base Hospital No. 6, interviewed by a Herald correspondent, said:

"I suppose any workman gets satisfaction out of the chance to do the best work he is capable of. I have felt in my medical work here in France, as part of the group of physicians and surgeons associated together at Base Hospital No. 6, that the army organization made it possible for me to do better work and to give better service than has ever been possible for me before.

BENEFITS OF ARMY SYSTEM

"Modern diagnosis and treatment is far too complicated for any single man to know everything about it. When it is well done, when people's illnesses are searched to the bottom and treated with success, it is because a number of men representing different specialties in medicine work as a team, each contributing his part to the study of the patient's troubles and to the formulation of a scheme of treatment. In civil practice at home this is seldom possible. In the first place, the patient cannot afford half a dozen high-priced specialists; in the second place, they cannot be easily brought together at frequent intervals to talk over the daily or hourly changes in the patient's condition.

"But in a base hospital like No. 6, where we have specialists in the diseases of the eye, of the ear, nose and throat, of the nervous system, of the skin, specialists in germ diseases, in troubles of the bones and joints, and in all the different branches of medicine and surgery, we can give our patients the benefit not merely of one man's knowledge and skill, but of the combined brains and special experience of the whole group. One of the patients in our hospital recently needed to be seen by the specialists for diseases of the eye, diseases of the nose and throat, and diseases of the nervous system, by a specialist in brain surgery, and by an internist or general practitioner. This group, meeting as it did every day at meals, could talk over the changes in the patient's condition, the variations in his temperature, in his pain and in all his physical functions, and make arrangements for whatever surgical interference or other treatment was necessary at just the right moment and without delay.

SMOOTH TEAM-WORK

"At home the smooth working of such team-work would have been interfered with by the private practice of each individual member of the group. They could not have met each other frequently. They could not have discussed the patient's troubles so frequently and freely.

"It is a great relief to be free altogether from money considerations and professional rivalries, to be working wholly for the patient and not against each other, to have no thought of competition or of anything except doing a good job. Moreover, by constant association, a group of physicians learns to work together like the members of a football team and to fit themselves quickly and skillfully each to each.

"To practice medicine with a fully equipped laboratory, a first-class X-ray plant, a modern surgical operating theatre, an equipment all ready to hand where one can run in at any moment and get whatever is necessary to have all our medical resources under one roof and at one's fingers' ends, as it were, to have no distracting or conflicting claims, make it possible for us to give a grade of medical and surgical service far higher than is possible in civil life. Being wholly new to military work, this has been a great and most delightful surprise to me. I am free now to give the best that I can. I have never been so before.

"Another great advantage of our work here is in having a continuous force of **well-trained graduate nurses**. In private practice at home one changes nurses very frequently and as a matter of necessity. In the hospital work of civil life one has to use **pupil nurses with only incomplete training**. But here in the army, with a full staff of picked graduate nurses working together with each other and with the same physicians continuously, the team-work of which I have just spoken, in relation to the combination of physicians with each other, holds good also for the relation of doctors and nurses in their efforts to benefit the patient.

"If the civil population at home could know what advantages the soldiers have over anything that can be obtained in the way of medical treatment in civil life, they **certainly would want their hospitals organized upon military lines at home.**"

VOLUNTEER MEDICAL SERVICE CORPS

Statement by Dr. Franklin Martin, Member of Advisory Commission and Chairman of General Medical Board, Council of National Defense

Foreword

The Volunteer Medical Service Corps was authorized by the Council of National Defense on January 31, 1918. Under this authorization the membership of the corps consisted of all physicians who because of overage, physical disability, dependents and essential home needs were not eligible for service in the Medical Reserve Corps of the Army or Navy.

Enlarged Scope of the Organization

On August 5 the Council of National Defense authorized a change in the scope of the organization and an increase and amplification of its central governing board. Membership in the corps as now authorized, makes eligible to the corps every legally qualified physician, including women physicians, holding the degree of doctor of medicine from a legally chartered medical school, without reference to age or physical disability, provided he or she is not already commissioned in the government service. This organization has now the approval of the president as indicated in the following letter:

THE WHITE HOUSE

Washington

August 12, 1918.

My Dear Dr. Martin:

I have received your letter of August 5, laying before me the matured plan for the reorganized Volunteer Medical Service Corps, of which you ask my approval. This work was undertaken by you under the authority of the Council of National Defense; it has had great success in enrolling members of the medical profession throughout the country into a volunteer corps available to supply the needs of the Army, Navy and Public Health Service. In co-operation with the General Medical Board of the Council of National Defense, the strong governing board of the reorganized corps will be able to be of increasing service, and through it the finely trained medical profession of the United States is not only made ready for service in connection with the activities already mentioned, but the important work of the Provost Marshal General's office and the Red Cross will be aided and the problems of the health of the civilian communities of the United States assured. I am very happy to give my approval to the plans which you have submitted, both because of the usefulness of the Volunteer Medical Service Corps and also because it gives me an opportunity to express to you, and through you to the medical profession, my deep appreciation of the splendid service which the whole profession has rendered to the nation with great enthusiasm from the beginning of the present emergency. The health of the Army and the Navy, the health of the country at large, is due to the cooperation which the public authorities have had from the medical profession; the spirit of sacrifice and service has been everywhere present and the record of the mobilization of the many forces of this great Republic will contain no case of readier response or better service than that which the physicians have rendered.

Cordially and faithfully yours,

(Signed) WOODROW WILSON.

Dr. Franklin Martin,
Advisory Commission,
Council of National Defense.

At a meeting of the Central Governing Board, held on Friday, August 2, it was moved by Dr. Sawyer, seconded by Dr. Martin, that the Central Governing Board shall consist of the present Central Governing Board (excepting Sherk, Bradford and Brophy) and others as follows:

Surgeon General William C. Gorgas, U. S. A.
Surgeon General William C. Braisted, U. S. N.
Surgeon General Rupert Blue, U. S. P. H. S.
Provost Marshal General E. H. Crowder.

Dr. Franklin Martin, Chairman of Committee on Medicine and Sanitation, Council of National Defense.

Dr. Edward P. Davis, President, Volunteer Medical Service Corps.

Dr. John D. McLean, Vice-president.

Dr. Charles E. Sawyer, Secretary.

Admiral Cary T. Grayson, U. S. N.

Dr. F. F. Simpson.

Dr. Frank Billings.

Dr. H. D. Arnold.

Mr. W. Frank Persons—Red Cross.

Dr. Victor C. Vaughan.

Dr. William H. Welch.

Dr. Robert L. Dickinson, Chief of Staff's Office.

Colonel R. B. Miller, U. S. A., Chief of Personnel Division.

Surgeon R. C. Ramsdell, U. S. N., Chief of Personnel Division.

Colonel James S. Easby-Smith, Executive Officer.

Dr. Joseph Schereschewsky, Assistant Surgeon General (Personnel).

Dr. C. H. Mayo or W. J. Mayo.

Dr. William Duffield Robinson.

Dr. George David Stewart.

Dr. Duncan Eve, Sr.

Dr. Emma Wheat Gillmore.

General Plan

The Volunteer Medical Service Corps is exactly what its name indicates. It is a gentleman's agreement on the part of the civilian doctors in the United States who have not yet been honored by commissions in the Army and Navy, and a representative board of governors consisting of officials of the government associated with lay members of the profession, in which the civilian physician agrees to offer his services to the government if required and asked to so do by the governing board.

It is a method of recording all physicians who are not yet in service and classifying them so that their services when required will be utilized in a manner to inflict as little hardship on the individual as possible. It is a method by which every physician not in uniform will be entitled to wear an insignia which will indicate his willingness to serve his government.

As more than 60 per cent. of the physicians of the country will be utilized in caring for the industries at home and the health of the home people, this large percentage of necessity will be expected to maintain their home status and continue their ordinary professional work.

ENROLLMENT OF PHYSICIANS

1. On August 8 the following statement was authorized by the War Department, signed by Newton D. Baker, Secretary of War:

"The War Department today has suspended further volunteering and the receipt of candidates for officers' training camps from civil life. This suspension will remain in force until the legislation now pending before the Congress with regard to draft ages is disposed of and suitable regulations drawn up to cover the operation of the selective system under the new law. * * *

Fearing that this order might be misinterpreted by doctors who would not distinguish between en-

listment as a private soldier and enrollment as an officer in the Medical Reserve Corps, on August 9 I asked the Secretary of War to issue a statement making clear this point.

2. In response to this request on August 10 the following statement was authorized by the War and Navy Departments:

"Orders issued by the War and Navy Departments on August 8 suspending further volunteering and the receipt of candidates for officers' training camps from civil life do not apply to the enrollment of physicians in the Medical Reserve Corps of the Army and the Reserve Force of the Navy. It is the desire of both departments that the enrollment of physicians should continue as actively as before so that the needs of both services may be effectively met.

(Signed) JOSEPHUS DANIELS

Secretary of the Navy.

(Signed) NEWTON D. BAKER,
Secretary of War."

3. It is desirable that the definite attention of the medical profession be called to this interpretation in order that enrollment for the Medical Reserve Corps of the Army and the Reserve Force of the Navy which is going on so rapidly at the present time, shall not be interrupted. Trusting that you will give this prominent space in the next issue of your Journal and such editorial comment as you may deem desirable, I am

Yours very truly,

FRANKLIN MARTIN,

Chrm. Gen'l Med. Board, Counsel of Nat'l Defense.

VOLUNTEER MEDICAL SERVICE CORPS

Washington, D. C., August 15, 1918.

1. We enclose herewith statement on the reorganized Volunteer Medical Service Corps, with letter from President Wilson formally approving plan adopted by the Council of National Defense; also, personnel of the Central Governing Board. We trust that you will be able to give space to this statement in the forthcoming issue of your publication.

By direction of Dr. Franklin Martin:

A. J. COLMAN,

Asst. Sec'y Gen'l Med. Board.

IOWA MEDICAL MEN IN THE WAR

To Camp Sevier, Greenville, S. C., base hospital, from Camp Beauregard, Lieut. Arlo R. Zuercher, Cedar Rapids.

To Camp Wheeler, Macon, Ga., as assistant to camp surgeon, from Fort Riley, Capt. Harry R. Reynolds, Clinton.

To Camp A. A. Humphreys, Accotink, Va., base hospital, Lieut. Egbert W. Sproule, Peterson.

To Camp Bowie, Fort Worth, Texas, base hospital, Major William Jepson, Sioux City. For duty,

from Fort Clark, Capt. William M. Wildman, Fort Dodge.

To Camp Cody, Deming, N. M., base hospital, Capt. John F. Studebaker, Fort Dodge.

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Capts. Nelson McP. Whitehill, Boone; Erle D. Tompkins, Clarion; Lieut. Ira J. Gibson, Fontanelle.

To Fort Oglethorpe for duty, from Fort Riley, Major Clarence Van Epps, Iowa City; Capts. Francis R. Holbrook, Des Moines; Lieuts. Kenneth E. Montgomery, Lawrenceville; Walter E. Draper, Manila. For instruction, Capts. Harry N. McCall, Clearfield; Charles A. Kearney, Dubuque; John M. Garrett, Fort Dodge; Lieuts. Arthur M. Washburn, Burlington; Herman L. Von Lackum, Dysart; Summer B. Chase, Fort Dodge; William H. Johnston, Muscatine; from Fort Riley, Lieuts. Sidney B. Bellingier, Council Bluffs; Alexander P. Steward, Inwood.

To Fort Riley for instruction, Capts. Charles S. Kennedy, Logan; Sylvester E. Hinshaw, Newton; Richard Hiusenga, Rock Valley; Lieuts. Frederick H. Rodemeyer, Alexandria; Leo A. Nelson, Allerton; Paul O. Anderson, Bouton; George H. Steinle, Burlington; James H. Bruce, Dickins; Rupert C. Herrick, Gilmore City; John R. Wright, Knoxville; Robert S. Shane, Pilot Mound; Frank H. Dierker, West Point; Edwin R. Wheeler, Zwingle.

To Garden City, L. I., N. Y., for duty, from Fort Riley, Lieut. Lonnie A. Coffin, Farmington.

To New Haven, Conn., Yale Army Laboratory School, as instructor, from Fort Leavenworth, Major Guthrie McConnell, Waterloo. For instruction in bacteriology, Lieut. Mathew T. Morton, Estherville.

To Newport News, Va., for duty, from Fort Riley, Lieut. Lonnie A. Coffin, Farmington.

To Otisville, N. Y., for temporary duty, from Camp Hancock, Capt. William L. Hearst, Cedar Falls.

To Talmage, Calif., Mendocino Hospital, for intensive training, Lieut. Harold E. Farnsworth, Galva.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. Leslie L. Carr, Clermont.

To Camp Crane, Allentown, Pa., base hospital from Fort Riley, Lieut. Chas. E. Block, Davenport.

To Camp Dodge, Des Moines, Ia., base hospital, Capt. Charles S. James, Centerville; Lieut. Channing G. Smith, Granger. For duty from Fort Riley, Lieuts. Albert J. Charlton, Lowden; from Fort Sheridan, Lieut. Edward A. Couper, Britt.

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. Walter W. Murphy, Lewis.

To Camp Grant, Rockford, Ill., base hospital, Lieut. Harvey Ransom, Des Moines.

To Camp Lee, Petersburg, Va., base hospital, from Camp Greene, Lieut. Fred W. Niehaus, McClelland. For duty, from Fort Oglethorpe, Lieut. George S. Bawden, Davenport.

To Camp McArthur, Waco, Texas, base hospital, Capt. Evan S. Evans, Grinnell; Lieuts. George Braunlich, Davenport; Albert D. Smith, Mason City;

Winfield M. White, Sioux City. For duty, Lieut. Leland O. Carey, Des Moines; from Fort Riley, Lieut. Laurell Lav. Lugar, Corydon.

To Camp McClellan, Anniston, Ala., base hospital, from Camp Wadsworth, Capt. Meredith B. Murray, Macedonia.

To Camp Meade, Admiral, Md., base hospital, from Camp Lee, Lieut. Erwin J. Gottsch, LeMars.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Sherman, Capt. Ransom D. Bernard, Clarion.

To Camp Sheridan, Montgomery, Ala., to examine the troops for tuberculosis, from Camp Joseph E. Johnston, Capt. Edwin S. Gillespie, Wenona.

To Camp Sherman, Chillicothe, Ohio, base hospital, Capt. George W. Koch, Sioux City.

To Fort Oglethorpe for instruction, Lieut. Lloyd T. Reed, Gravity; from Fort Riley, Lieut. Audley E. Nelson, Sidney.

To Fort Riley for instruction, Capt. Henry J. Talboy, Onawa; Lieuts. Charles M. Hazard, Arlington; Harry R. Secoy, Sioux City; Hugh S. Detchon, Victor; Merritt N. Gernsey, Waverly.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. R. W. Wood, Newton. For duty from Western Department, Lieut. J. B. Owen, Central City.

To Camp Gordon, Atlanta, Ga., base hospital, Capt. J. B. Keogh, Dubuque.

To Camp McClellan, Anniston, Ala., base hospital, from New York, Lieut. B. T. Whitaker, Boone.

To Camp Pike, Little Rock, Ark., for duty, from Camp Travis, Capt. W. A. Bates, Neola.

To Camp Shelby, Hattiesburg, Miss., base hospital, from New York, Lieut. W. S. Chester, Britt.

To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Dix, Major A. R. Hoover, Des Moines.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Zachary Taylor, Lieut. L. B. Amich, Millersburg.

To Camp Upton, L. I., N. T., base hospital, from Camp Grant, Lieut. J. E. Edgington, Washington; from Camp Zachary Taylor, Lieut. C. E. Moore, Newton.

To Fort Oglethorpe for instruction, Capts. B. J. Callahan, Livermore; J. D. Brownson, Monona; Lieuts. V. H. Hasek, East Cedar Rapids; T. F. E. Bess, Fort Madison; C. E. Chenoweth, Iowa City; F. L. Secoy, Sioux City.

To Fort Riley for instruction, Capts. E. I. Woodbury, Burlington; N. W. Johnson, Cedar Rapids; F. E. Cressler, Churdon; A. M. Sherman, Clarinda; J. E. Kessell, Des Moines; C. D. Harlan, Keswick; H. M. Hoag, Mason City; Lieuts. W. Diven, Atlantic; W. F. Amdor, Carbon; R. J. Matthews, Clarinda; C. C. Bowie, Dedham; C. A. McGuire, Dubuque; W. H. Mott, Farmington; J. L. Cruzen, Lacona; C. A. Miller, Nevinville; E. L. Hollis, Rolfe; C. H. Graening, Waverly; J. T. Carmody, Wesley.

To Fort Sill, Okla., for duty, from Camp Greene, Capt. T. L. Long, Woodward.

To Fort Thomas, Ky., for duty, from Chicago, Capt. A. B. Phillips, Clear Lake.

To Hoboken, N. J., base hospital, from Camp Crane, Lieut. I. J. Gibson, Fontanelle. For duty, from Camp Crane, Capts. N. McP. Whitehill, Boone; E. D. Tompkins, Clarion; from Fort Oglethorpe, Lieut. E. P. Weih, Clinton.

To New Haven, Conn., for duty, Capt. J. T. Padgham, Grinnell.

To Yale Army Laboratory School, for duty, from Fort Leavenworth, Lieut. D. M. Nyquist, Eldora.

To report to the commanding general, Central Department, for assignment to duty, Capts. F. N. Meade, F. L. Vanderveer, Cedar Falls; Lieut. H. H. Hunt, Hazleton.

To Waynesville, N. C., for duty, from New Haven, Lieut. M. D. Jewell, Decorah.

To Willoughby, Ohio, for duty, from Camp Sherman, Capt. G. A. Plummer, Cresco.

Lieut. Col. David S. Fairchild, Chief Medical Inspector of 42nd Division has been relieved and has been appointed by General Pershing Chief Surgeon of the Division.

Supplement to list of Iowa physicians who have been recommended by the Surgeon-General for commissions in the Medical Officers' Reserve Corps.

Charles Henry Burke, 1st. Lieut., Algona.
 Christian Henry Herrmann, Jr., 1st. Lieut., Amana.
 Charles Merrill Bazard, 1st. Lieut., Arlington.
 Samuel Tannier Patterson, 1st. Lieut., Arthur.
 Joseph Hall Whiteley, Capt., Bonaparte.
 John Wesley Dixon, Capt., Burlington.
 Ernest Irving Woodbury, Capt., Burlington.
 John Guy Clapsaddle, 1st. Lieut., Burt.
 William Franklin Amdor, 1st. Lieut., Carbon.
 Arthur Wright Erskine, 1st. Lieut., Cedar Rapids.
 Charles Llewelyn Baskin, 1st. Lieut., Chariton.
 Frank Ernest Cressler, Capt., Churdan.
 Alva Maynard Sherman, Capt., Clarinda.
 Gordon Follette Harkness, Capt., Davenport.
 Alexander Daniel McKinley, Capt., Des Moines.
 Loren Kenneth Meredith, 1st. Lieut., Des Moines.
 John Victor Keogh, Capt., Dubuque.
 Clarence Warren Mehlhop, Capt., Dubuque.
 James Orvil Murphy, 1st. Lieut., Eldon.
 David Oliver King, 1st. Lieut., Eldora.
 Joseph Roderick Winnett, 1st. Lieut., Eldora.
 William Henry Mott, 1st. Lieut., Farmington.
 Thomas Lucast, Capt., Forest City.
 Thomas Floyd Ernest Bess, 1st. Lieut., Ft. Madison.
 William Edwin Lyon, 1st. Lieut., Garden Grove.
 Thomas Bigelow Lacey, Capt., Glenwood.
 Samuel Cory Buck, Capt., Grinnell.
 John Thomas Padgham, Capt., Grinnell.
 William Cory Hand, 1st. Lieut., Hartley.
 John Lewis Cruzen, 1st. Lieut., Lacona.
 Melvin Josiah McVay, 1st. Lieut., Lake City.
 James Murray Fettes, 1st. Lieut., Le Mars.
 Walter Waugh Murphy, 1st. Lieut., Lewis.
 Charles Stephen Kennedy, Capt., Logan.

Harry Martin Hoag, Capt., Mason City.
 Jason Daniel Brownson, Capt., Monona.
 Willard Joshua Fenton, 1st. Lieut., Mystic.
 Bush Houston, 1st. Lieut., Nevada.
 Chester Arthur Miller, 1st. Lieut., Nevinville.
 Rollin Webster Wood, 1st. Lieut., Newton.
 Dell Warner Ward, 1st. Lieut., Oelwein.
 James Henry Talboy, Capt., Onawa.
 Charles Henry Bartruff, 1st. Lieut., Reinbeck.
 William Henry Hombach, 1st. Lieut., Remsen.
 Charles Otis Yenerich, 1st. Lieut., Rockford.
 John Allen Snyder, 1st. Lieut., Roland.
 Judson William Myers, 1st. Lieut., Sheldon.
 Benjamin Spafford Barnes, 1st. Lieut., Shenandoah.
 Milo Orion Brush, 1st. Lieut., Shenandoah.
 Charles Augustus Katherman, Capt., Sioux City.
 Frank L. Secoy, 1st. Lieut., Sioux City.
 Patrick Eugene Keefe, 1st. Lieut., Sioux City.
 Charles Elmer Magoun, 1st. Lieut., Sioux City.
 Laurence Walde Pence, 1st. Lieut., State Center.
 George Lee Prentice, Capt., Troy.
 Hugh Smith Detchon, 1st. Lieut., Victor.
 Alfred Anthony Hoffman, 1st. Lieut., Waterloo.
 Fred Carlton Sage, Capt., Waterloo.
 Francis Rufus Sparks, Capt., Waverly.
 Milton Blythe Galloway, Capt., Webster City.
 Guy Thomas McCauliff, Capt., Webster City.
 Thomas James Carmody, 1st. Lieut., Wesley.
 James Terry McConnaughey, 1st. Lieut., Winfield.
 Alexander Louis Darche, 1st. Lieut., Woodward.

SOCIETY PROCEEDINGS

Tri-State District Medical Society (Iowa, Illinois and Wisconsin), held a session of four days at Madison, Wisconsin. The attendance was large, but what was of more importance, the sentiment of professional helpfulness both as regards the duty of the profession to the government and to the progress of medicine was remarkable and the subject of frequent comment.

The city of Madison and the local profession joined in creating a feeling that the coming together of the medical profession was worth while and tended to inspire the Doctor with the thought that he is an important and honored factor in the world's welfare.

Dr. William B. Peck with the committee Drs. W. T. Lindsay, H. G. Langworthy and C. L. Best are to be commended on preparing one of the best programs that it has been our fortune to see.

From outside the district included in the jurisdiction of the Tri-States came many distinguished members of the medical profession who contributed in many ways to the interest and profit of the meeting. The banquet which closed the sessions was a most enjoyable affair; the speeches were unusually good and under the direction of J. B. Winslow, chief justice of the Supreme Court of Wisconsin, as toastmaster, dignified and full of instruction.

Upon recommendation of the nominating committee, composed of Drs. J. W. McDonald, Aurora; H. G. Langworthy, Dubuque, and Wilson Cunningham, Platteville, officers were elected as follows: Honorary president, Dr. James W. Guthrie, Dubuque; president, Dr. L. H. Prince, Sparta; first vice-president, Dr. H. G. Langworthy, Dubuque; second vice-president, Dr. C. R. Bardeen, Madison; third vice-president, Dr. W. B. Helm, Rockford; managing director, Dr. W. B. Peck, Freeport; secretary and treasurer, Dr. D. G. Smith, Freeport. Trustees, Dr. James W. MacDonald, Aurora, three years; Dr. Henry G. Langworthy, Dubuque, three years; Dr. Fred D. Nye, Beloit, three years; Dr. John Keefe, Waterloo, two years; Walter B. Helm, Rockford, two years; Dr. W. T. Sarles, Sparta, two years; Dr. William J. Herrick, Ottumwa, one year; Dr. Wilson Cunningham, Platteville, one year, and Carl F. Snyder, Freeport.

The Jasper County Medical Society met in the assembly room of the City Library, Newton, Iowa, Tuesday evening, August 6, 1918, and was called to order by the president, Dr. M. R. Hammer at eight o'clock.

Dr. R. W. Wood read a paper on "Acute Tonsillitis," and Dr. H. P. Engle, a paper on "Chronic Tonsillitis," after which the papers were fully discussed by the society.

Dr. Hill, the delegate to the State Society, made a report on the doing at the State Society Meeting, which was received with interest by all the members present.

Dr. Frank Carpenter of Reasonor was unanimously elected to membership in the society.

Dr. S. E. Hinshaw being recently called to service with the Army resigned as secretary of the society, resignation accepted, and the president appointed Dr. H. P. Engle secretary pro tempore. Dr. Engle was later unanimously elected to fill the vacancy for the remainder of the term.

Jasper county is to be congratulated for being among the leading counties, in the number of doctors, who have been called to the colors. The following is the list of those now in the service: Lieut. C. R. Van Voorhis, Lieut. Chas. E. Moore, Lieut. J. W. Pillingsby, Lieut. John T. Hanna, Lieut. R. W. Wood, and Capt. S. E. Hinshaw. Dr. H. F. Keables volunteered, but was rejected on account of physical disabilities.

W. E. Anspach, Colfax.

The mid-summer meeting of the Pottawattamie County Medical Society was held Wednesday, August 14, in the Masonic Hall at Oakland at 12 o'clock noon. Meeting called early so members could attend the Chautauqua program in the afternoon.

The program was as follows: "Physical Examination of the Chest for Tuberculosis—Army Method," Dr. H. C. Nichols, Carson. Paper on "Alcohol," Dr. F. T. Sybert, of Council Bluffs. Seventeen members present. Society voted to pay dues of absent members in the service.

PERSONAL MENTION

Dr. L. E. Schafer of Iowa, stationed with an evacuation hospital near Toul rendered emerging service to Archie Roosevelt at the time he was wounded.

Drs. D. W. and Warson McCrary have opened a new hospital at Lake City for general medical and surgical purposes.

Dr. J. W. Coakley of Creston received the nomination as state representative at the primary election in Union county.

Dr. J. Scott Stevens of Cedar Falls has been appointed city health officer to succeed Dr. D. L. Vander Veer who has enlisted in the Army Medical Service.

Dr. M. S. Carlett of Oelwein ordered to report at Rochester, Minn. for examination for M. R. C.

Dr. George Huegerich of Carroll has been ordered to report to Camp Greenleaf, Georgia, for service.

Dr. Louis G. Stuhler has accepted a commission in M. R. C. and will report at Fort Riley.

Dr. Walter William Daut of Muscatine has been commissioned lieutenant M. R. C. and will report as soon as ordered.

Drs. J. J. Booth, Crew and E. F. Biggs, Marion, have been accepted for Y. M. C. A. Army Service.

Dr. Harry Griffith of Pasadena, Cal., has been commissioned captain and ordered to report at Fort Oglethorpe, Georgia.

Doctor Louis Baumann, Assistant Professor of Medicine and Director of Chemical Research at the State University Hospital, Iowa City, will devote two hours daily to the examination of the blood and urine of private patients and consultation on the diseases of metabolism, including diabetes, gout and chronic nephritis.

BOOK REVIEWS

INTERPRETATION OF DENTAL AND MAXILLARY ROENTGENOGRAMS

Robert H. Ivy, M.D., D.D.S. Major Medical Reserve Corps United States Army; Associate Surgeon, Columbia Hospital, Milwaukee. Formerly Instructor in Oral Surgery, University of Pennsylvania. With 259 Illustrations. C. V. Mosby Company, St. Louis, Mo., 1918.

This most excellent book is opportune. So many extravagant things are said of x-ray work in dentistry, so much has the appearance of personal advertisement, that it is really a comfort to have statements of fact presented to us. After a chapter on general considerations including a statement of the Limitations of Roentgenography the doctor proceeds with a consideration of the anatomy of the teeth and jaws illustrated by a number of excellent roentgenograms followed by pathological conditions illustrated in a similar manner. The remainder of the book is devoted to the correlation of Clinical Findings. Methods of Localization and Interpretation

of Roentgenograms. The latter the author places great stress upon. Many most excellent x-ray plates are used to illustrate different conditions the dental surgeon has to meet, and so arranged as to be helpful in interpreting the conditions which actually exist. The proper conception of pathology, diagnosis and the treatment to be employed must necessarily rest on interpretations based on study experience and correlations of clinical findings. We believe that work of this kind will have a helpful influence in placing roentgenology in dentistry on a proper basis.

POST GRADUATE MEDICINE—PREVENTION AND TREATMENT OF DISEASE

By August Caille, M.D., F.A.C.S. Emeritus Professor of Medicine and Consultant to Department of Pediatrics. New York Post Graduate Medical School and Hospital, etc. Profusely Illustrated. D. Appleton and Company, 1918.

This book has some rather unique features in the way of illustrated detail treatment. Not only is the treatment of cases outlined but how to carry out the treatment is shown. Most students on graduation unless they have an intern course in a good hospital are at a loss to know just how to proceed. This book will show them how. The first section points out the bedside and office technic of feeding methods. Hydrotherapeutic methods, Lavage and Irrigation. Catheterization, Stimulation, Anesthesia, Massage, Scarification, Cupping, Leaches, Poultices, Venesection, Bier Hyperemia Treatment, Various Tests, etc.

Following the section on illustrative technic comes a consideration of the different forms of disease which fall under the hands of the general practitioner. The prophylaxis and Treatment of Infections and Contagious Diseases. The special advantage of this book lies in the attention to details of technic which the practitioner can turn to with great advantage, particularly the physician who has not access to hospitals in which the technic of treatment is worked out by specially trained technicians. The book is of such practical value that we can most cordially recommend it to the consideration of a large class of general practitioners.

THE TREATMENT OF CAVERNOSUS AND PLEXIFORM ANGEOMATA BY THE INJECTION OF BOILING WATER (WYETH METHOD)

By Francis Reder, M.D., F.A.C.S. Visiting Surgeon to City Hospital; Consulting Surgeon to St. Johns Hospital and Missouri Baptist Sanitarium, St. Louis, Mo. Illustrated. C. V. Mosby Company, 1918.

This monograph is a presentation of the Wyeth Method of Treating Angeomata in the Hands of Reder. The author became interested in this method of treatment, and after some experience published

his results in Surgery, Gynecology and Obstetrics. The paper attracted considerable attention and led the author to republish it in the form of a brochure. The boiling water injection in aneoma is of unquestionable value but requires some study and care and for this reason Dr. Reder offers to the profession his experience and study in a method of treatment quite satisfactory in its results.

EMERGENCIES OF A GENERAL PRACTICE

By Nathan Clark Morse, A.B., M.D., F.A.C.S., Eldora, Iowa. Surgeon to Emergency Hospital, Eldora, Iowa. Author Post-Operative Treatment, etc. C. V. Mosby Company, 1918.

Dr. Morse has undertaken the task of presenting to the profession a book on how to meet the emergencies which arise in the practice of the general practitioner. No claim is made of bringing to the profession a special message but rather, in a plain practical way to point out the best methods of meeting the serious and trying emergencies which are sure to come to every doctor in his work. The physician is exceedingly fortunate who finds himself prepared to meet always the things that come to him in a busy life. It is fairly to be presumed that the trained physician is familiar with emergency conditions as set forth in Dr. Morse's book, and is prepared to meet them. But we are of the opinion that the suggestions to be found everywhere in this book will be helpful to a large class of physicians. Every thing said by Dr. Morse can be agreed to and safely followed.

THE ELEMENTS OF THE SCIENCE OF NUTRITION

By Graham Lusk, Ph.D., D.Sc., D.F.R.S., Professor of Physiology at Cornell Medical School, New York; Third Edition, Reset. Octavo of 641 Pages, Illustrated. W. B. Saunders Company, 1917. Cloth \$4.50 Net.

We come again to the problem of chemical changes in quite a different way. In its relation to nutrition Professor Lusk reminds us that in another decade scientific knowledge will probably permit the formulation of the subject from the standpoint of physical chemistry, but that day has not yet arrived. In the first chapter will be found an outline of the history of the development of our present knowledge of the processes of nutrition. The author in presenting the subject takes up first; starvation as the foundation for a study of the changes the tissues undergo when deprived of certain food elements, or of food altogether. Then follows the maintenance of temperature which is so intimately associated with food metabolism and respiration under the control of a complex nerve apparatus.

The author gives the usual divisions of foodstuff and then considers the question of food equilibrium and first, the influence of protein food followed by the influence of the ingestion of fat, carbohydrates,

and the intermediate metabolism. Then there is considered the influence of mechanical work on metabolism. A normal diet and the nutritive value of materials used as foods based on numerous experiments. The food requirements during the period of growth. The last five chapters are devoted to metabolism in different forms of disease and a final chapter on the influence of certain drugs on metabolism and food economics. It is shown by experimental evidence that strichnia which therapeutics have relied on so much in the past has little or no influence.

This work is of great practical value in determining questions of nutrition and of food values in the management of nearly all cases which come under the care of the general practitioner and the specialist as well.

THE SURGICAL CLINICS OF CHICAGO

April, 1918. Volume II, Number 2, With 80 Illustrations. Published Bi-Monthly. W. B. Saunders Company.

This number comes to us with nineteen different clinics by well known Chicago surgeons of various degrees of interest. Dr. Dallas B. Phemister presents an interesting case of transplantation for repair of defects of the lower jaw. The transplant was taken from the tibia. All the cases presented in this number have a certain degree of clinical value. This number is not quite up to the standard of previous clinics.

SYPHILIS AND PUBLIC HEALTH

By Edward B. Vedder, A.M., M.D., Lieut-Col., Medical Corps United States Army. Published by Permission of the Surgeon-General United States Army. Lea and Febiger, 1918. Price \$2.25.

The importance of the subject is set forth in the introduction in a statistical way as the disease appears in the United States. In chapter one, the prevalence of syphilis is set forth in group incidence as it appears in classes. It appears that syphilis occurs most frequently in the upper and lower class while agricultural laborers are relatively free. The author presents statistics of syphilis in other countries. It appears most prevalent in Russia. In other European countries the prevalence as far as can be determined does not materially differ. An authority quoted by the author states that "Roughly speaking, one may say that most German men have had gonorrhea and about one in five syphilis." Returning to the United States the statistics show that from ten to eighteen per cent. of the population suffer from syphilis. It is alleged that syphilis and gonorrhea vastly overshadow all other diseases both acute and chronic. The author then proceeds to consider groups from a statistical point of view, and then a discussion on the sources of infection followed by methods of transmission. A considerable portion of the book is devoted to questions of methods to prevent genital transmissions and methods of con-

trol. Then syphilis is thoroughly a social problem. At this time, when venereal diseases are being considered as never before; when conservation of men and women is one of the most important questions before the public, the appearance of Colonel Vedder's book is most opportune. It contains information of the greatest value to those actively engaged in propaganda for betterment and should be read with the utmost care.

DIFFERENTIAL DIAGNOSIS

Presented Through an Analysis of 317 Cases. By Richard C. Cabot, M.D. Assistant Professor of Clinical Medicine, Harvard University Medical School. Volume II Second Edition, Octavo of 709 Pages, 254 Illustrations. W. B. Saunders Company, 1918. Cloth \$6.00.

Dr. Cabot has presented us with another volume of diagnostic studies in the form of a second edition of Volume II. The peculiar feature of this work is an analytic study of a series of cases under different heads, supplementing the cases presented in the first two volumes with some new subjects derived from war experiences, as shell shock. The work given us by Dr. Cabot is analytic in character considering cases grouped under certain predominating characteristic which may be studied from time to time as a constant practice in case study. The reader has the opportunity of grouping various symptoms around a central leading symptom group which has its significance in diagnosis and of value determined. The method is highly intellectual and logical and must appeal to the more cultivated class of practitioners.

hydrates, etc., and questions of diffusion and osmosis, their relations to animal membranes, absorptions and diffusion. The structure of the cell in its chemical and physical relations, the intercellular substance, etc.

Chapters second and third relate to enzymes in their complex relations. Chapter four discusses the chemistry of bacteria and their products, including bacterial enzymes. Immunity against bacterial enzymes, poisonous bacterial products, ptomaines, toxins and endotoxins. Chapter five, chemistry of animal parasites. Chapter six, phytotoxins and zootoxins; then two chapters on immunity reactions, complex subjects of great scientific and practical importance.

Following the study of immunity reactions comes a consideration of the chemical means of defense against non-autogenic poisoning. A considerable section of the book is devoted to inflammation, regeneration growth and disturbances in circulation which lead to various tissue changes of a retrogressive character and constitute important part of pathology. The special feature of Dr. Wells' work is the closer study of chemical tissue changes in pathology.

The chemistry of physiology and pathology are fully recognized by all writers on these subjects, from the starting point of infections, toxins, through immunization and defense growth, regeneration, degeneration, metabolism, etc., to the close of the last chapter. In all this long series Dr. Wells brings into prominence all the complex problems so far as they have been worked out.

PRINCIPLES OF SURGICAL NURSING

A Guide to Modern Surgical Technic, by Frederick C. Warnshuis, M.D., F.A.C.S. Visiting Surgeon, Butterworth Hospital, Grand Rapids, Michigan. Chief Surgeon, Pere Marquette Railway. Octavo of 277 Pages with 255 Illustrations. W. B. Saunders Company. Philadelphia and London. Cloth \$2.50 Net.

Dr. Warnshuis has given us the best work we have on the technic of surgical nursing. Every detail has been worked out with great care and beautifully illustrated. It is shown that the most efficient service in the operating room and the best post-operative care can be secured in the small hospital by following out the plan set forth in this book, if the nurse will begin at the beginning of the book and following page by page to the end. Unfortunately in so many instances no systematic plan is developed; there is no beginning and of course there is no end. The arrangement of the text is such that the student nurse can begin with the preparation of the patient, the preparation and the arrangement of the operating room, the care of the patient immediate after the operation, the watching of the patient for dangerous symptoms, the later care, etc. There is a chapter on formula for the preparation of solutions and agents used. Also one on cutting and folding of gauze, etc. Nothing seems to have been over-

CHEMICAL PATHOLOGY, BEING A DISCUSSION OF GENERAL PATHOLOGY FROM THE STANDPOINT OF THE CHEMICAL PROCESSES INVOLVED

By H. Gideon Wells, PhD., M.D., Professor in the University of Chicago; Director of the Otho S. A. Sprague Memorial Institute. Third Edition Revised and Reset. W. B. Saunders Company, 1918.

The author states that in the three years since the second edition was issued numerous additions to our knowledge have made it necessary to reprint the entire work and that several subjects have been largely rewritten. During recent years great activity has been observed in the study of pathological conditions from related physiology, rather than from clinical methods. The author therefore, attempts to bring forward more definite chemical considerations. Commencing with the cell, the chemistry of disease must refer back to the chemistry and physics of the normal cell. The first point of definite knowledge of highly complex bodies is the splitting up of proteins, but here the evidence is not sufficiently clear to escape speculation as to what the near future may determine. Following come fats and lipoids, carbo-

looked. The cuts illustrate the work so completely that one reasonably intelligent cannot go astray. We cordially recommend this book to all operating nurses.

THE PRACTICE OF PEDIATRICS

By Charles Gilmore Kirley, M.D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital, Second Edition Revised and Reset. Octavo of 913 Pages, 136 Illustrations. W. B. Saunders Company, 1918. Cloth \$6.50 Net.

The increased interest in child-welfare will no doubt increase the demand for comprehensive books on the diseases of children. Dr. Kirley begins his book with a discussion on the nutrition and growth of new born child, natural and artificial feeding, etc. Conditions of malnutrition and management. Commencing with diseases of children the author presents the methods of examination and diagnosis. Practitioners who have had experience with children will appreciate the importance of care and patience in observing the behavior of children in health and sickness as pointed out in this volume. Considerable space is given to the several conditions that often occur immediately after birth. Probably the most important chapter in children's diseases is of the gastro-intestinal tract and requires the most thoughtful consideration. It would appear that the greatest danger in childhood comes from disorders of the stomach and intestines and constitutes a considerable part of the practice among children; particularly is this true of gastro-intestinal intoxications. To render this section of the book as helpful to the practitioner as possible the most approved method of management and treatment are presented. In relation to appendicitis Dr. Kirley states that he has never seen a case of this disease before the fourth year, diagnosis and treatment are set forth. Excellent directions are given for the treatment of prolapse of the rectum, a troublesome condition.

The author considers with much care diseases of the respiratory system. The influence of certain catarrhal conditions on tuberculous infections, etc. Particular attention is given to pleuritic effusions and to empyema which are always to be thought of in pleurisy and pneumonia of children.

It is quite impossible to do more than point out the scope of the work. It is to take up forms of disease as in an adult and study them from the standpoint of childhood conditions; treatment to be modified accordingly.

A TREATISE ON CLINICAL MEDICINE

By William Hanna Thompson, M.D., L. L.D., Formerly Professor of Practice of Medicine and Diseases of the Nervous System in the New York University Medical College; Ex-President of the New York Academy of Medicine, etc. Second Edition Revised. Octavo Volume of 678 Pages. W.

B. Saunders Company, 1918. Cloth \$5.50 Net.

The author presents the subject of medicine from the clinician's point of view. No attempt is made in the way of physiologic or pathologic considerations but rather the value of symptoms in determining the nature of disease and their significance at the bedside and in the clinic room, and as a foundation for treatment. The general plan of elaboration of a system of internal medicine, is the text-book with its definitions, etiology, pathology and an outline of treatment, a work like Simon on laboratory diagnosis supplemented by a work like the one before us which considers the value of symptoms as presented to the physician at the bedside and how to deal with them. Dr. Thompson first inquires into the significance of pain of emaciation, cough, vomiting, etc. A classification of infections, communicable or contagious of an acute character and of a chronic nature, as syphilis. Infections communicable by intermediate carriers, as labor pneumonia and typhoid fever communicable by inoculation as malaria, yellow fever.

Following the various types of infections comes diseases of circulatory system, the respiratory tract, digestion disorders and so on considering each system in detail. No attempt at testing the scientific acumen of the reader is made but a plain every day effort at presenting the clinical facts helpful to the welfare of the patient.

A LABORATORY MANUAL OF QUALITATIVE CHEMICAL ANALYSIS

By A. R. Bliss, Jr., M.D., Ph.G., Professor of Pharmacology, School of Medicine, Emory University, Atlanta, Ga.; Formerly Professor of Chemistry and Pharmacology; Graduate School of Medicine, University of Alabama, Second Edition, Revised and Reset; 194 Pages, with Working Tables. Philadelphia and London. W. B. Saunders Company, 1918. Cloth, \$2.25 Net.

This book could be used as well for beginners who are not medical and pharmacy students as for those students. It contains no new methods but the materials selected are those which are most important in an introduction to the subject. The directions are clearly given. The book is well printed on good paper. Even with the lack of novelty of material and treatment it may serve well for the use of the students for whom it was written.

PUBLIC HEALTH REPORTS FOR MARCH, APRIL, MAY AND JUNE

Issued Weekly by the United States Public Health Service. Containing Information of the Current Prevalence of Disease. The Occurrence of Epidemics and Related Subjects, Washington, D. C., Government Printing Office.

*Our facilities make us
headquarters for the
Organotherapeutic Agents*



The Best costs no more than—

The physician will be pleased to learn that his patient can now get Armour's Corpus Luteum, Powder, 2- and 5-grain capsules and 2-grain tablets, at a reduction of approximately 33⅓% from former prices.

Corpus Luteum (Armour) is the true substance made from material selected in our own abattoirs, and will give results.

Armour's Surgical Catgut Ligatures

are smooth, strong and sterile. Sizes 000 to No. 6 inclusive. Plain and Chromic, 5-foot lengths. Emergency (20-inch lengths).

Pituitary Liquid (Armour), ½cc and 1 cc ampoules, is free from preservatives. ½cc obstetrical, 1 cc surgical.

ARMOUR AND COMPANY
CHICAGO

2415

Take Advantage of Our **OCULIST CO-OPERATIVE POLICY**

A Combination of

"SELF-RITE" and "EVER-LOCT" MOUNTINGS
ACCURATE, PROMPT PRESCRIPTION SERVICE

And a policy of distribution, which has been the means of our rapidly becoming the oculist's favorite prescription house.

Write for particulars

UHLEMANN OPTICAL COMPANY

Mallers Building

5 S. Wabash Ave.

CHICAGO

PREVENTION OF MENINGITIS, DIPHTHERIA AND OTHER INFECTIOUS DISEASES IN THE ARMY CANTONMENTS

Some exceedingly interesting work on the prevention of the infectious diseases originating in the nasopharyngeal tract is being done by army surgeons at various cantonments.

For instance, in an article on "Meningitis at Camp Greene," contributed by Capt. Paul G. Woolley, to the Journal of Laboratory and Clinical Medicine for April, the statement is made that "In the only organization which made use of systematic nasal sprays since the first of the year, not a single case (of meningitis) developed, and also that in those organizations in which sprays were resorted to after the appearance of the disease no other cases appeared." The spray used at this camp was Dichloramine-T. Captain Woolley says that after this experience "one comes to have a very healthy respect for Dichloramine-T as an agent for the prevention of diseases of upper respiratory tract origin." He adds: "The organization numbered seven in the chart has had the lowest measles and pneumonia rate in Camp Greene and is the only one which has systematically used the nasal spray. Its record is striking, and forms a reasonable basis upon which to recommend that the routine use of nasal spraying with Dichloramine-T be introduced into the camps for the prophylaxis of respiratory diseases."

Virtually, the same method of treatment was employed by Major Carey P. McCord, Major Alfred Friedlander and Capt. Robert C. Walker, at Camp Sherman, in the treatment of diphtheria, in an arti-

cle published in the July 27th issue of the Journal American Medical Association, in which they state that in the treatment of these carriers they inaugurated the use of chlorazene. They employed "an aqueous solution of 0.25 per cent. strength, administered as a gargle three or four times daily. In certain cases, the application was made by throat specialists to insure the reaching of remote points in the nasopharynx. The gargling was followed with an oily spray of Dichloramine-T of 2 per cent. strength. It may not be maintained that the chloramin action is exclusively responsible for the appreciable reduction of days in hospital of carriers. This is in part due to the Chlorazene-Dichloramine-T treatment and in part to the general painstaking systematizing of the entire care of such patients. Through the use of these several described procedures, it has been possible to return the carriers to duty after an average of twenty-three days in hospital. During the month of May our systematizing of treatment made it possible to discharge all diphtheria patients (sixteen in number) after fifteen days in hospital, and all carriers (twenty-nine in number) after sixteen days in hospital."

The combined use of aqueous chlorazene solution and the oil solution of Dichloramine-T promises to be of utmost value, not only in preventing diphtheria and meningitis, but also as a prophylactic in pneumonia, measles, streptococcic sore throat and the other diseases originating in the nasopharyngeal tract.

Chlorazene and Dichloramine-T are manufactured by, and obtainable from the Abbott Laboratories, Chicago, Illinois.

Dichloramine-T

Abbott and CHLORCOSANE
Quality

MADE IN
AMERICA



DO IT NOW

Write for literature and prices of this powerful, non-irritating, war-developed antiseptic.

THE ABBOTT LABORATORIES

Home Office and Laboratories
CHICAGO, Dept.

New York Seattle
San Francisco
Los Angeles Toronto Bombay

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, OCTOBER 15, 1918

No. 10

SOME OF THE MEDICAL LESSONS OF THE PRESENT WAR*

C. P. HOWARD, M.D., Iowa City

However important a role the medical profession plays in civil life, it is insignificant as compared with that of the Army Medical Corps in the Army whether at home or abroad. The Army Service Corps and the Medical Corps occupy the limelight in military organization.

Thanks to the great organizing abilities of the Surgeon General's office in all the allied countries and to their already existing excellent personnel, it was a comparatively easy task to interest the medical profession in their duties and to assign them to their places in the great machinery. To such men as General Gorgas of this country, General Sir Alfred Keogh of Great Britain, and General Jones of Canada too much praise cannot be given.

In America and the British Empire a small body of the civil medical profession had devoted their spare time to the Medical Corps of the National Guard or the Territorial Army or other Militia organization. These men were in close touch with the regular Army Medical Corps and were the connecting link between formerly widely separated casts.

The regular and the volunteer soon acquired a great mutual respect. The former found executive ability in his civil brother that he did not expect to find; while the volunteer soon had to express his admiration for the skill and professional knowledge of the regular. Yet naturally from their training alone the regular army officer has best fitted into the executive and the civilian into the more professional position.

What at first seems to be boundless red tape is soon appreciated by the civilian as necessary for the execution of the vast amount of business of the corps. Indeed in my short year's experience in army life I found the civilian officer rather the more inclined to introduce fresh forms, rules

and regulations to the daily routine than even the most hide-bound bureaucrat. Forms for every known epidemic disease under the canopy of heaven; forms for trench nephritis, forms for the cardiac neuroses, forms for shell shock, and now thanks to the consulting psychologist, forms for recording a man's mental efficiency. Headquarters of all the allied armies are being deluged with forms! How many more of them find their way into the waste paper basket only the chief of the staff knows!

The greatest task that the executive has to master is to avoid putting the square peg into the round hole! Each medical officer is obsessed with the idea that he is a surgeon in embryo if not in being, and that this is his opportunity to learn surgery under the ægis of service to his country! The properly qualified surgeons after all are as necessary in war as in peace, and this is no more time to learn surgery unless the rudiments are already acquired, than to serve in the aviation corps because in peace time one can drive an automobile.

Just as in civil life so in army life the general practitioner can serve his country best by doing what he is best qualified to do—the general practice of the Army—the regimental first aid post, the field hospital, the dressing station—positions where his experience of meeting every kind of emergency from constipation to a compound fracture of the thigh render him facile princeps. A highly trained surgeon or internist would be as unqualified for such positions as the general practitioner is for the operating room or the laboratory. The general practitioner if he is wise will soon appreciate that his reward will be in learning how to handle men still better, and in acquiring a vast experience along general medical and surgical lines that only years of civil practice would yield. Further he will have within easy access skilled consulting help of all kinds, except when he is in the front line trenches where his main duties are along executive and preventative medical lines. In short the general practitioner is as necessary for the military organization as any other cog in the vast

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, Iowa, May 9, 10, 11, 1918.

machinery of war. He must realize this and a vast reward awaits him.

Here it is perhaps not out of place to remark that only the so-called "regular medicine" is recognized by the military authorities. In spite of attempts of some of the "pathies"—the irregular practitioner has no place. Why? Because it is a question of utilitarianism, not mawkish sentiment and prejudice. The army authorities are too well informed to permit the quack and the charlatan to practice on the soldier. They cannot be influenced by the ignorant politicians' support of a small body of men claiming martyrdom at the hands of a trust!

For the internist, surgeon, pathologist, orthopedist, hygienist, oculist, aurist and oto-laryngologist special fields are open. The great opportunity is not so much for the surgeon as for the other specialist. To the lay as well as certain medical minds the medical duties in this war are largely surgical. This is not so any more than rifle-fire or bayonet-exercise form the principal duties of the soldier. Naturally the surgeon is in constant demand in the rest camp and in the casualty and base hospitals, but one has only to realize one of Osler's many aphorisms that more deaths in previous wars were due to bacilli than bullets for one to appreciate that it is along preventative medical lines that our science has contributed most to the efficiency of the war machine.

Smallpox vaccination had long been accepted in theory at least by all but the merest fanatic. (However let me say in parenthesis, that there is in this state a very large unvaccinated population unvaccinated partly through ignorance of the laws of health, partly from prejudice and partly from the laxity of the medical profession who have lost their respect for the formerly much dreaded disease of smallpox. Little do the careless practitioner and the ignorant though more excusable public, realize that unless the practice of vaccination of every man, woman and child at frequent intervals is kept up the smallpox noxa will regain its former virulence and will find a more and more fertile soil in which to grow.)

Needless to say the first medical attention the recruit receives is vaccination against smallpox. I neither heard of, much less saw a case of smallpox during my twelve months army medical life.

As you all know the battle for smallpox vaccination had long since been won but not so for typhoid vaccination. In the Spanish-American War in which some of you served, among 107,973 men there were 20,738 cases with 1580 deaths; more deaths from typhoid than wounded men. Col. A. E. Wright in 1897 introduced ty-

phoid inoculation to the Indian Army with remarkable results, reducing the incidence of the disease one-half and the mortality from 25 per cent. to 17 per cent. Several years later (1902?) Colonel, then Major, Russel introduced into the American Army the same measure.

In spite of the above lessons the British Army in its South African campaign had among 557,653 officers and men 57,684 cases of enteric with 8,225 deaths, while only 7,582 men died of wounds.

The Russo-Japanese War figures afforded such a striking contrast to the above that when the present war broke out as fast as the men were enlisted they were vaccinated against typhoid fever. What was the result? At the end of sixteen months among upwards of 2,000,000 British soldiers there were about 1,400 cases of enteric with eighteen deaths.

A fall in the incidence of the disease from 20 per cent. to 0.07 per cent. Is that not something over which science, and particularly preventative medicine can fairly gloat. Further when these 1400 cases are investigated by modern laboratory methods only 200 odd are due to the bacillus typhosus proper and the vast majority to one or other of the two strains of bacillus paratyphosus. Now all troops are inoculated against all three strains with the expected result that paratyphoid has almost disappeared. Surely this will mean that in the near future there will be compulsory vaccination against typhoid among the civil population, in spite of all the former jibes and sneers of some of the comic papers, and the ignorant among the public.

Who has heard of *Camp dysentery*—the scourge of the Civil War—since 1914? It has been stamped out of the European battlefields by the sanitary division of the Army Medical Corps. A proper water supply, thorough disposal of garbage, carefully built latrines and the complete destruction of excreta have been the weapons responsible for this triumph. It is true that on the Eastern fronts in Gallipoli, Mesopotamia and Egypt some cases of amœbic dysentery have occurred.

These two water-borne diseases have then been met and overcome. What of some of the others?

Tetanus at first seemed more to be feared than even the poison gases of the Huns, so frequent was it in the first few months of the war. In civil practice the antitetanic serum had proved somewhat of a disappointment therapeutically and when used as a prophylactic it was not always possible to assign the non-development of the dreaded lock-jaw to the serum, as the disease was not very prevalent. The same doubt could

not be cast upon the chances of contamination of the open and closed wounds in the highly fertilized battlefields of France and Belgium. When therefore this danger was fully realized vast quantities of antitetanic serum were shipped to France and every wounded man was given at the first aid dressing post 1500 units of the serum at the same time that his wound was dressed. Then tetanus almost ceased to exist. During my six months in France I saw only two or three cases; one who had been overlooked in the rush back from no man's land to the base during the battle of Loos, and a second who had been wounded six months before and who had then been given his prophylactic dose, but when wounded a second time had been apparently purposely exempted, probably through fear of anaphylaxis. No longer have we any doubt in the prophylactic value of antitetanic serum.

Never before in spite of the prophylactic use of serum has the therapeutic value of antitetanic serum been given such an extensive trial under such favorable circumstances for study and criticism.

We must first consider the results of the treatment of the cases which developed while the soldiers were still in France and secondly the cases which developed after the wounded had been transferred to the base hospital in England.

Naturally in the former the wounds were severe, sepsis was then more marked and the incubation period shorter. It is not surprising to learn therefore in the first year there were 179 cases reported with a mortality of 78.2 per cent. and in the second series reported by Leishman and Smallmann¹ of 160 cases the mortality was 73.3 per cent. in spite of the most thorough combined methods of administration. Irons² gives the usual mortality in civil life as 78.9 per cent. in untreated cases. So there was little cause for rejoicing. But one must bear in mind that these cases are further complicated by great shock, hemorrhage, sepsis and often gas gangrene.

In marked contrast are the figures reported by Bruce^{3 4} from the base hospitals in England to which the less severely wounded are transferred or the more severely wounded only after having recovered from the first effects of their wound, and in whom therefore the incubation period has been long. In his first series of 231 cases the mortality was 57.7 per cent. and in his second series of 195 cases it was still lower having fallen to 49.2 per cent. These figures are only slightly

better than those reported by Irons from civil hospital practice, namely 225 cases with 61.77 per cent. mortality. Much however has been learned both as to the method and as to the time of administration. The most important contribution is probably the need of giving a further prophylactic dose of serum *prior* to a surgical procedure even in a soldier already treated prophylactically at the time of the receipt of his wound.

The gas-bacillus infections have not yet been so effectively mastered though here again distinct advances have been made in the preparation of various new antiseptic drugs (as Dakins solution, dichloramine-T, flavine, acriflavine, proflavine) which have strong bacteriacidal properties, but which do not destroy the phagocytic and other defensive properties of the tissues.

As one would expect from the necessary intimacy of trench life with its lack of facilities for personal hygiene *scabies* has been very prevalent. We saw much of it though as MacCormack and Small⁵ state it was very often disguised by various pyodermic complications, impetigo, furunculosis and dermatitis.

Still more common is of course *pediculosis*. This in itself however disagreeable would not be dangerous did it not entail the possibility of transmission of disease. While no typhus, probably the most dreaded of louse-borne diseases, has occurred on the Western front other less malignant but very incapacitating diseases have appeared. It is now generally accepted that the so-called "Trench Fever," is transmitted by infected pediculi. As to its exciting cause nothing definite is known in spite of a great deal of excellent work. Dimond⁶ is the last one to offer a contribution to the etiology of Trench Fever. He has found a small hemogregarina in the venous blood of twelve cases. The liver seems to be the main habitat, but the spleen and lung and probably the bone-marrow also harbor the parasite. The pediculus corporis or possibly the louse of the rat which is so prevalent in the trenches, carries the infection.

Infective jaundice has been of frequent occurrence among armies in the field and this the greatest of all wars has naturally produced many cases. Two Japanese workers, Imada and Ido,⁷ had shown in 1916 that the febrile jaundice of Japan is due to a spirochæte. This also has been found by Dawson, Hume and Bedson⁸ in the cases occurring in the British and French troops. The treatment is as yet purely symptomatic. Ex-

1. W. B. Leishman and A. B. Smallman, Lancet, 1917; Vol. i, page 131.
2. E. E. Irons, Jour. Infect. Dis., 1914; Vol. xv, page 367.
3. D. Bruce, Lancet, 1915; Vol. ii, page 901.
4. D. Bruce, Ibid, 1916; Vol. ii, page 929.

5. MacCormack and Small, Brit. Med. Jour., 1917; Vol. ii.
6. Dimond, Lancet; 1917, Vol. ii.
7. Imada, Ido, et. al, Jour. Exp. Med., 1916; Vol. xxiii, page 377.
8. Dawson, Hume and Bedson, Brit. Med. Jour., 1917; Vol. ii.

perimentally the use of salvarsan has been disappointing. However the use of immune sera gave more encouraging results and no doubt in the very near future we will hear of the successful use of immune sera in the treatment of this disease.

Trench nephritis was and still is a condition to be reckoned with. Various theories have been advanced and worked on and then gradually exploded. First that it was due to some metallic poison from the use of the so-called iron ration; next that it was due to some form of bacterial infection—naturally the streptococcus as that organism seems to be always blamed for the obscure infections and finally according to Sundell and Nankwill⁹ to dietary insufficiency. The English soldier subsists practically entirely on canned or frozen meat and condensed milk. The officers can supplement their rations by buying fresh food, while all ranks of the Indian Army received fresh, newly-killed meat, and fresh milk. The officer class and the Indian soldier were comparatively immune to trench nephritis.

We cannot omit from this discussion the two great plagues of civil life—syphilis and tuberculosis. Osler¹⁰ has recently reemphasized the importance of *syphilis* in war as well as in peace. As he has so often stated Mars and Venus were ever close friends. "The last quoted figures for the British Army at home (April 23, 1917) are 71,000 cases of gonorrhea, 21,000 cases of syphilis and 6,000 cases of soft chancre. In the Canadian Army to March 31, 1917, there have been 18,335 cases of venereal diseases—figures which have stirred public opinion in the Dominion to the boiling point." As far as I know no figures are available for the American Expeditionary Force, yet while we can hope for a somewhat better showing thanks to the methods introduced by Colonel Bradley and Major Lyster prior to the entrance of this country into the world war, yet the figures for the army during the concentration on the Mexican border showed a venereal disease admission rate of 110 per 1,000 men. This would mean for an army of 1,000,000, 110,000 cases of venereal diseases! This is truly a staggering figure and from merely the military standpoint what a casualty list! But what a woeful problem when one considers the after effects to the individual, his wife and his offspring! Does it not surely warrant some unusual effort on the part of the military authorities, the medical profession and congress to com-

bat the appalling possibilities. I have no remedy to offer. Greater minds than my poor one have striven in vain. But surely were the soldier in the ranks, the public of both sexes and our administration made to realize the dangers of the *treponema pallidum* and the gonococcus, (greater indeed than even the Hun himself) a more united, more compelling effort would be made.

Tuberculosis—France and the other allied countries were panic-stricken when Professor Landouzy in December, 1915, before the French Academy of Medicine published the official French figures for the first year of the war, which showed that no less than 86,000 men had been discharged from the Army on account of tuberculosis. Later Biggs¹¹ upon his return to America after his tour of investigation of conditions in France states that up to February of 1917 "it was estimated that about 150,000 soldiers had thus far been returned and more are constantly being discharged for this cause."

However Colonel Dercle and Major Rist¹² of the French Army vigorously criticized these statistics. The former pointed out that these figures represent diagnoses by the average army medical officer and would not be accepted by the tuberculosis expert. When clearing hospitals for suspected tuberculous soldiers were established in France, Major Rist found that 80 per cent. to 90 per cent. of these suspects were proven to be non-tuberculous by use of the modern clinical and laboratory methods. In another clearing hospital Colonel Dercle states that less than 20 per cent. of the first 1,000 admissions were found to be tuberculous.

Even these figures are higher than those found in the British and Canadian Armies. Thus Osler¹³ states that in 1915 only 2,770 cases of tuberculosis were dealt with by the Chelsea boards, and that of these 1,129 claims were not allowed. Further that at a Canadian Base Hospital in England among the first 6,233 admissions there were only twenty-six definite and sixteen doubtful cases of tuberculosis. Elliot¹⁴ recently estimated that during the ten months between January 1 and October 31, 1916, there were admitted to the tuberculosis hospitals in Canada 492 cases from an average of 116,441 troops in training. On the other hand up to March 31, 1917, from the entire Canadian Expeditionary Force only 670 soldiers had been invalided home with tuberculosis.

9. Nankwill, *Lancet*, 1917; Vol. ii.

10. W. Osler, *Lancet*, 1917; Vol. i, page 787.

11. H. M. Biggs, *Amer. Rev. Tuberculosis*, 1917; Vol. i, p. 259.

12. C. A. Dercle, *Med. Record*, 1918; Vol. xciii.

13. W. Osler, *Lancet*, 1916; Vol. ii, page 220.

14. J. H. Elliot, *Amer. Rev. Tubercul.*, 1917; Vol. i, page 267.

Nevertheless the United States Army realized that "the germ enlists with the soldier" (to quote Osler once again), and perhaps being unnecessarily alarmed by the French official figures have instituted a more thorough and scientific examination of all the recruits for the National Army under the direction of Colonel G. E. Bushnell, for many years head of the United States Army Sanitarium at Fort Bayard, New Mexico. This should guarantee the elimination of the truly active tuberculous recruit and do away with the danger of the rejection of the fit and able bodied man and of the filling up of the army and civil sanatoria with non-tuberculous soldiers. Otis¹⁵ who supervised the examination of 30,000 recruits of the New England National Guard reports that 680 men or 2 per cent. were found to be tuberculous.

Colonel Bushnell¹⁶ has recently written that of 800,000 recruits for the United States Army somewhat less than one per cent. showed signs of tuberculosis. Thus 7,000 who had never left the country have been culled out by a careful medical examination at the various concentration camps.

Of course what proportion of the remainder will develop active signs of the disease during their training and after some months at the front remains to be seen. Yet Osler, Bushnell and others believe that this will be but a very small proportion and probably a smaller number than had these young men remained in civil life.

Lastly what lesson can we learn from France and England about the necessity for the care of the civilian population. For many of you it is a much greater sacrifice to stay at home and do the day's work than it is for certain of your younger brethren to join the Army and enjoy the admiration of the patriotic citizen, incidentally catering to their own love of adventure and the prospect of rapid professional development with a much increased earning capacity upon their return home. Some of us must stay at home. The teachers, the general practitioner over forty years of age and the physically unfit are much more useful at home than abroad. It may not be glorious but it is as necessary for the proper maintenance of the machinery of the war as is the mobilization of skilled labor for the ammunition factories, the ship yards and the railroads.

PERINEAL PROSTATECTOMY*

JENNINGS CRAWFORD, M.D., Cedar Rapids

Preliminary Treatment—In any type of prostatectomy the preliminary treatment is as important as the operation itself. There are many details of this treatment but a complete discussion of these details will not be attempted here.

These cases are frequently infected, are more or less uremic, have low vitality, and are poor operative risks when first seen.

The essential thing is preliminary drainage which can be accomplished by an in-lying catheter in the urethra. This obviates a preliminary operation. A few cases do not require a residual catheter but can be catheterized three or four times a day. This depends on the amount of residual urine, the renal function and the presence of uremia. The Phenol-Sulphone-Phthalein test is used as the indicator of the renal function.

Free catharsis and plenty of sodium bicarbonate during this early treatment will largely prevent uremia and acidosis occurring after the operation.

A few years ago I used urotropin in all these cases but believe there is little gained by its use. These patients usually have enough bladder irritability without the additional irritation of urotropin. On the contrary, enough soda bicarbonate to make the urine alkaline will relieve practically all irritation in every case. It also seems that patients become rapidly immune to any existing infection under this therapy; no doubt due to the fact that the majority are colon bacillus infections.

It is a good rule to keep all of these cases under observation and treatment at least a week; many require a longer time, but even the best risks should be thoroughly prepared for the operation. Invariably a thorough preliminary treatment will shorten the time of convalescence.

During this period of observation and treatment, every case is cystoscoped to determine the character and location of the obstruction; also to note the presence of stone or tumor in the bladder. It is especially important to know the presence of diverticulum of the bladder. The importance of cystoscopy can not be too greatly emphasized. I have cystoscoped every case but one who had a stricture of the bulbous urethra; it should have been possible to cystoscope even this case.

Anesthesia—I have used ether, and nitrous-oxide and oxygen for anesthesia and of the two pre-

15. E. O. Otis, Bost. M. and S. Jr., 1918; Vol. clxxviii, page 33.

16. G. E. Bushnell, J. A. M. A., 1918; Vol. lxx, page 663. Med. Record, 1918; Vol. xciii, page 4.

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, Iowa, May 9, 10, 11, 1918.

fer the nitrous-oxide method. Patients have less discomfort after the operation with its use and it seems to be less harmful to the kidneys which is a vital point in some cases. In the hands of an unskilled anesthetist the ether is to be preferred.

Technique—By the use of the name perineal prostatectomy I refer to the enucleation of the hypertrophied prostate according to the technique of Young. There have been many methods tried in perineal prostatectomy and it may be that the adoption of various expedients with their consequent failures has helped to turn many operators from the perineal to the supra-pubic method.

It is not my purpose to attempt to discredit an operation so widely used as is the supra-pubic prostatectomy, nor to attempt to make comparisons.

If one expects to make a small perineal incision; carry the incision through the bulbus, membranous and prostatic-urethra to the bladder-neck; tear out the prostate through this incision; that operator is going to have hemorrhage, shock, injury to the rectum, fistula, incontinence and sepsis as a frequent accompaniment to his perineal operations.

Also carelessness in carrying out Young's technique has caused several operators to discontinue its use. It is only a few years since a prominent genito-urinary surgeon told his class that he opened the rectum in 25 per cent. of his cases of perineal prostatectomy using Young's method. It is not surprising this man turned to supra-pubic prostatectomy.

The technique is in brief as follows: An inverted V-shaped incision is made in the perineum from below the bulbus urethra to the inner sides of the ischial-tuberosities. The fascia is split, and with the finger and the handle of a knife the peri-rectal forasæ on each side are opened up. The apex of the incision is completed. The central tendon is cut. The remainder of the exposure of the prostate is simply a gentle dissection of the recto-urethralis muscle from the membranous urethra.

The urethra is split just in front of the prostate. The sound in the urethra withdrawn and the prostatic tractor inserted into the bladder through the incised urethra.

The prostate is pulled forward, and the fascia covering it is cut close to the urethra and carefully pushed backward. This brings the prostatic capsule well in view; frequently the prostate can be brought nearly to the skin margin.

An incision is made on each side of the presenting gland capsule and through these gaping incisions the hypertrophied lobes are enucleated.

Insertion of drainage tubes and packing a tag of gauze in each side of the prostatic capsule, and closure of the incision completes the operation.

The particular point in the method is, that *this* is an extra-urethral operation; not an intra-urethral operation.

Advantages—With reasonable care there is no anatomical structure injured and none removed. Sometimes the lateral aspect of the prostatic urethra has been torn, and twice I have torn the bladder. These slight defects have not delayed the healing nor marred the end results in any way.

The whole operation is under the guidance of the eye and is an exact and definite surgical procedure. It consumes but little time, which is not an important item as many insist. This is proven by the remarkable absence of shock following the operation.

Bleeding is an inconsiderable factor; many cases do not lose over a dram of blood. I have never seen bleeding that was alarming nor requiring any particular mode of control.

The absence of great trauma and the slight loss of blood greatly lessens the occurrence of shock; in fact in most cases there is not a suggestion of shock, and in no case has there been fatal collapse following the operation.

Convalescence—Following the operation, the drainage tubes are left in the bladder twenty-four hours through which the bladder is irrigated sufficient to keep it free from clots of blood. In some cases there is slight bleeding from the bladder for a few hours, but never excessive.

At the end of twenty-four hours the tubes in the bladder and the gauze packing in the prostatic cavity are removed. The third day the bowels are moved with castor oil and soft diet is given. I do not urge these patients to get out of bed earlier than the sixth or seventh day.

Frequently at the end of the first week and in a few cases on the third day these patients have control of the internal sphincter and empty the bladder at intervals in a bed-pan.

The wound gradually closes and urination is partly through the urethra at the tenth day, on the average. The majority of cases are completely healed before the twenty-first day; the earliest case to heal was a man of seventy-six who healed up in seven days.

One case picked his wound open completely and the resulting exposure required three months to heal.

Another case was complicated with calculi in the bladder. A fragment of stone, later lodged in the sinus. An attempt to remove it through a

urethroscope pushed it back into the bladder. Cystoscopy then revealed three stones remaining in the bladder and a fourth stone in a diverticulum. The stones were removed supra-pubically, the stone in the diverticulum proving very difficult to remove. The wound healed promptly.

Epididymitis has occurred during convalescence in several cases and in practically every case there is a history of epididymitis previous to the operation. All cases have been relieved in a few days by application of ice, except one which proved chronic and recurred many times in the following months but without serious consequences. In no cases has there been serious results from epididymitis.

Adaptations of Perineal Prostatectomy—In considering the application of perineal prostatectomy, it may be mentioned that there is one type of obstruction that is not adapted to this operation; that is, the small fibrous obstructions which are best treated by the urethral-punch under local anesthesia.

Ordinary middle lobe enlargements are easily enucleated through one of the lateral cavities, and in cases with a very large middle lobe hypertrophy this lobe may be removed by splitting the prostatic urethra latterly and delivering the lobe through this incision. This is a rare necessity and one which I have not encountered.

Large calculi may also be delivered in the same way.

In cancer of the prostate the perineal prostatectomy is especially desirable. The preservation of the prostatic urethra being no doubt a barrier to the formation of stricture which is such a common occurrence where the prostatic urethra is removed.

I have had one case of cancer that lived two years after perineal prostatectomy without obstruction recurring. This is not unusual. Young reported in 1911, thirty-four cases of cancer operated upon, one case living at the end of seven years.

Causes of Failure—I have had five failures, all due to death. In none of these five could the cause of death be attributed to the operation.

The first case, a man of sixty-five, died suddenly on the twelfth day of disease of the heart, while sitting in a chair.

The second case, a man of eighty-four, was complicated by a large prostatic abscess. He refused all water and food after the operation and died on the twelfth day of uremia.

The third case, age eighty years; died on the thirty-fifth day of uremia and carcinosis.

The fourth case, age sixty-seven, died on the

thirty-fourth day of disease of the heart.

The fifth case, age sixty-five, died on the seventh day of adynamic ilius.

While the number of cases operated upon is not sufficient for statistical purposes yet it seems significant that there has been no failures due to the pitfalls so frequently attributed to this operation and that the deaths occurring were not the result of the operation. Perhaps all could have been prevented by a longer and more careful preliminary treatment.

Results—In considering the results of these perineal prostatectomies it must be remembered that any consistent success in prostatectomy is believed by the laity to be an impossibility, and accordingly these patients put off the operation as late as possible.

With the exception of four cases, all the cases I have operated upon have been cases of complete retention.

Of these four who elected the operation, one age sixty-five had a residual urine of twelve ounces, and, another age seventy-nine had fourteen ounces residual urine. The third and the youngest case of all, age fifty-nine, had a residual of three ounces. The fourth, age sixty-five, had five ounces residual urine and one previous attack of retention.

The final results of these perineal prostatectomies has been uniformly good.

Incontinence has not occurred in a single case; the majority of patients having complete control of the bladder before the sinus closed.

Stricture has not occurred in any case. This is an important fact, since the occurrence of stricture is simply a recurrence of the original trouble in another form; obstruction.

The previous use of a catheter does not seem to effect the final result; one case used a catheter for five years before operated upon. He left the hospital twenty-two days after the operation with complete control of the bladder and no residual urine.

The few cases which have had a tendency to urgency and frequency have been easily corrected by hydraulic dilatation of the bladder, and exercise of the internal and external sphincters by stopping and starting the stream of urine.

The most marked feature aside from the cure of the obstruction and its immediate relief is the improvement in the general health of these patients; they even look younger at the time of leaving the hospital.

I am convinced that the results of this operation well warrant the care required in its performance.

Discussion

Dr. R. A. Weston, Des Moines—The Doctor is to be congratulated on the presentation of this paper because he has prepared it for a general gathering of practitioners and surgeons and not for specialists. For that reason he has had to leave out some things he would naturally put in a paper of this character. Dr. Crawford and myself had practically the same training. I have wandered away from the fold and do not do perineal prostatectomies any more. In the last number of the *Journal of the A. M. A.* is an article by Dr. Clarence Martin, formerly connected with the St. Louis Hospital now in the Medical Reserve Corps, who sent to the different practitioners in the State of Missouri who had had prostatectomies to do questionnaires regarding their cases. And it is quite interesting to note that he received back reports on 110 cases of prostatectomy, fifty-five of which were perineal prostatectomies and fifty-five suprapubic prostatectomies. Dr. Martin makes a comparative resumé of the results obtained in these cases and shows the difference between the two methods of procedure. This shows the suprapubic to be superior in every way. There are only a few men who can do a perineal prostatectomy. I have seen many men tackle the job with sorry results, and for that reason I would in a general way advise against perineal prostatectomy. I feel that probably there are only two or three men in the United States who can do a good perineal prostatectomy, and probably Dr. Crawford is one of them. I have never been fortunate enough to see him operate, but hope to have the opportunity to do so soon. I know he has had good training along that line. However, without such unusual training I believe perineal prostatectomy to be a dangerous procedure, and for that reason I would prefer to put a taboo on it. The first point we must consider is that a man must have good assistants, he must have assistants accustomed to that type of work. In the second place he must, I believe, select his cases. Dr. Crawford states that he can do any case by the perineal route; I do not believe that every case can be done by the perineal route, I think that suprapubic prostatectomy is better for some cases. I have never seen a case that could not be done suprapubically. They talk about the mortality; we have reduced the mortality rate in suprapubic prostatectomy to two or three per cent., which is well in keeping with the results obtained in choosing the perineal route, although it may not be quite as low. And since the introduction of the suprapubic vacuum drainage apparatus, which keeps the patient absolutely dry, there is no drawback on that score at all. The patient is as dry as in an ordinary abdominal operation. I recall only two instances in which the drainage tube became plugged at all. Therefore the former objection that the patient was always bathed in a mass of wet dressings is removed. In general, taking into account age, physical condition, and every other consideration, I believe the two-step suprapubic prostatectomy when infection is present is

advisable. If the case is not infected do one operation, if it is infected do two operations, the second one in two to three weeks after the first. To simply open the bladder and put in a tube requires only two to three minutes under nitrous oxid gas anesthesia, therefore no shock whatever is induced. A man that could not stand that could not stand anything at all. If he is an operative case at all he can survive a three to five minutes' operation.

Dr. L. W. Littig, Iowa City—I have always been troubled to find the answer to one particular question, and that question is the following: Why in a case of cystitis should the urine be made alkaline, when we know that the organisms responsible for the condition develop better in an alkaline than in an acid medium? Perhaps Dr. Crawford can answer the question. A word about nitrous oxid gas as an anesthetic, and what I am about to say regarding that will also apply to perineal prostatectomy. We are told that nitrous oxid gas is a safe anesthetic in the hands of an individual who knows how to give it. Tight-rope walking is a safe procedure for those who know how to do it, but nevertheless it is a dangerous procedure for the average individual. How many men are really skilled in doing perineal prostatectomy? It is a good operation if you are skilled. How many operations would you have to do during the time you are gaining skill, and what results would accrue while acquiring this skill? I agree with Dr. Weston that the two-stage operation should be done in cases of infection, and the one-stage operation in cases not infected. Only two days ago we discussed nitrous oxid anesthesia. A few days later, a young girl eighteen years of age died on the table under nitrous oxid gas anesthesia in the hands of a skilled anesthetist. The statement was recently made that nitrous oxid is the most dangerous of all the general anesthetics, even more dangerous than chloroform anesthesia, and I believe that statement is true.

Dr. W. W. Bowen, Fort Dodge—I suppose I ought not to say very much about prostatectomy with any degree of authority for I have done only about fifty cases. Originally the surgeons of Fort Dodge always did perineal prostatectomy, we thought we had the technic down pretty well and we were quite satisfied. But several years ago I attended a meeting of surgeons in Chicago at which notable men expressed their opinions relative to prostatectomies. At that time they were all doing the operation by the perineal route except one man, who spoke for the suprapubic method and was quite severely dealt with, until finally, in self-defense, he arose and said: "Before long I expect to see you all doing suprapubic prostatectomy." His prophecy became true and this is the first paper favoring perineal prostatectomy I have heard for a long time. In the last ten years we have done the suprapubic operation exclusively, and in our experience the mortality is not as great as it was when we were doing the perineal operation. Complications during the hos-

pital period are very, very much less, the patient is not wet, although we do not put on the suction apparatus here, but simply put a tube in the bladder and sew it down rather snugly with the skin, have the tube run to the edge of the bed and hang a bottle on it the same as in drainage following gall-bladder operations. The complications that so often follow prostatectomy, as rectal fistula, recto-vesical fistula, etc., are much less in our experience since using the suprapubic method. The only complication we have had of any consequence at all is now and then a case of epididymitis, but we will have as many of these when we choose the perineal route as with the suprapubic route.

Dr. P. B. McLaughlin, Sioux City—With reference to the operation for prostatectomy, I thoroughly believe that Dr. Crawford can do a very successful perineal prostatectomy because we know he is skilled along these lines. However, there is no doubt at all but that suprapubic prostatectomy in the hands of the general operator is far preferable. With reference to the question of local anesthesia in cases of prostatectomy: We are using one-half of one per cent. novocain solution with adrenalin chlorid, and once you acquire the simple technic involved you will be surprised how easily you can cut down on the prostate and enucleate the lobes by the use of novocain and adrenalin chlorid solution. A simple method of controlling hemorrhage after enucleation of the gland which is very effectual is to place a small amount of fat in the capsule of the prostate after enucleation of the gland. You get no bleeding at all, which is surely some satisfaction to the operator, as we are all anxious to know that we have our bleeding under control following a prostatectomy.

Dr. H. J. Prentiss, Iowa City—I would like to say a word by way of backing up Dr. Crawford, in relation to the argument this morning, rather than because of any clinical experience I have had, at least for a great many years. In my laboratory I have had opportunity to observe a number of surgeons working on the perineum, and it has been an interesting thing to note how surprised they were at the simplicity of the anatomical approach. When first starting out, the dissection seems rather complex, but when you have become orientated, it is an exceedingly simple proposition. And I think one of the reasons why general practitioners are afraid of the perineal route is that they forget the obliquity of the anal canal, and how that relates to the base of the urogenital triangle. They have there a very beautiful landmark in passing up to the prostate, and that is the bulbo-cavernous muscle, a thin, strong muscle which makes an elegant guide if one will follow it in going up towards the prostate. And, to repeat, it seems to me that the reason the suprapubic operation has been so much preferred is because operators do not appreciate the extreme simplicity of the perineal approach by reason of the very beautiful guide that is present, and have rather

avoided this operative procedure on that account. I thought I would speak of this phase of the subject because I have greatly appreciated Dr. Crawford's paper.

Dr. Crawford—I am almost alone in this discussion. I would say to Dr. Prentiss that while I did not mean to bring up this never ending discussion of the suprapubic versus the perineal operation, yet I think perineal prostatectomy covers a multitude of operative measures, briefly mentioned, which really have no place in surgery. It is simply impossible to make a vertical incision in the perineum, go straight in, and expect not to cut the rectum right in two, because the rectum lies right against the membranous urethra. You must open up each side of the perirectal fossa and pull down and gently separate the recto-urethralis muscle from the urethra. If that is done you will not have fistula or other complications of that kind. Also if you make this medium incision and carry it right through, you are in the majority of cases going to cut the external sphincter, and perhaps it will not unite sufficiently to prevent incontinence. I appreciate Dr. Weston's recommendations, but I rather think, as Dr. Prentiss says, that this is not such a difficult approach, and any one can with a little careful study acquire the technique necessary to carry it out. But in order to do it at all you must be positive of your landmarks and know just where you are going every minute. If not, you will certainly have some sad things occur. There is also one difficulty which cannot be met by every operator, and that is having assistants who will constantly assist you and get used to the technique. Unless you do have at least one person who is rather proficient in assisting, the operation is lengthened. This, however, does not seem to make much difference because elderly people are operated on for every malady under the sun, and the majority seem to survive anyway. The cases that I have operated on have not been selected, they have been cases that have come right along one after another. I did not attempt to go into the complications that follow the suprapubic operation, but there is no question but some complications not experienced in doing the perineal operation follow suprapubic prostatectomy. For instance, hemorrhage is certainly a factor, and if there were no other evidence than the great variety of methods of control this would be sufficient proof that it was a prominent factor in the operation. Frequently the prostatic urethra is removed in doing the suprapubic operation, and this is not always desirable, for two results may follow: First, stricture, which occurs in quite a few cases. I have had a number of suprapubic cases, operated on in other clinics, that have come in with stricture, and it requires occasional dilatation. They were suffering from practically the same disease that they were suffering from before. The objection is not so apparent as a recto-urethral fistula, but all the same it is killing them just about as fast. Also this stricture will prevent the supra-

pubic sinus from healing, and I have seen one or two such cases, one case that was still unhealed a year later and another several months after operation, and in both cases it was necessary to dilate the urethra which had become tight, put in a permanent catheter for ten days or two weeks, and by this method they have healed up. I recently noticed a report of five cases of suprapubic prostatectomy in which the internal sphincter of the bladder had not moved forward into the prostatic cavity, as it is supposed to do, but remained out in its normal position, causing what one might call a diaphragm. This internal sphincter had in front of it a large pocket, the old prostatic cavity of scar tissue, the patient had difficulty in emptying the bladder at all, and it was nearly impossible to catheterize these cases. I do not mean to discredit suprapubic prostatectomy, for it certainly is an operation a little easier controlled than any other, and it has a low mortality. But we must not lose sight of the fact that there is possible grief with the suprapubic as well. I rather agree with Dr. Littig in regard to gas anesthesia, although I still continue to use it because it really is a pleasant anesthetic to take, and so far I have escaped having any trouble with it. In regard to an alkaline urine, the objection is that if you try to use urotropin you must have an acid urine, and an acid urine is irritating. Taking the general run of urinary infections they are caused by the colon bacillus, and the colon bacillus is not found ordinarily in an alkaline urine, but in an acid one, and it also produces a mild condition of acidosis and sometimes a severe condition of acidosis which requires large quantities of soda to control.

FOREIGN PROTEIDS IN THERAPEUTICS*

EVAN S. EVANS, M.D., Grinnell

The resemblance noted between the symptoms of a certain group of diseases and those of anaphylaxis lends some weight to the supposition that there may be a certain group of diseases that are really the manifestations of an anaphylactic reaction. In this category we can hardly escape classifying asthma, hay fever, and urticaria.

Apparently it is also possible to classify in this class practically all of the diseases which we distinguish by the term, infectious diseases, and the concomitant phenomena of immunity.

The salient facts concerning the group of phenomena which we term anaphylaxis are too well known to make it worth while to more than briefly state them. In the first place an animal into whose circulation there is introduced a small amount of protein of foreign origin develops after a lapse of eight to ten days a condition of changed reaction to the protein, known as allergy;

that is if given a second dose after eight or ten days even in much smaller quantity than the first, he becomes immediately ill with symptoms of respiratory difficulty, convulsions, heart failure, etc. It is of interest to note at this point, that the typical anaphylactic reaction differs for different animals, whereas guinea pigs have the symptoms noted above, as does also man, dogs have a purging and diarrhea, and often require relatively rather larger doses at the second injection to produce death than other animals. So then a proteid injected into an animal will sensitize that animal to that proteid after the lapse of eight or ten days. Also the sensitization may be transmitted passively to another animal by injection of serum from the sensitized animal. This condition of sensitization lasts for an indefinite time, some months at least, and to some degree of for several years in some animals.

It is possible to sensitize animals by administering the protein in any way in which it may be absorbed as such, as by inhalation, by inunction through the skin or through abrasions in the skin or mucosa. It is also important to note that the same animal may be sensitive to more than one proteid at the same time, in fact it may be sensitized to several proteids at the same injection. The amount of proteid required for sensitizing an animal is small enough that it produces no ill effects when administered to an animal not sensitized. The same sized dose which produced the sensitization will, if administered a second time after the lapse of the necessary time, produce death almost instantaneously.

Now if a sensitizing dose be administered to an animal, and a second dose be administered at a shorter interval than eight days, say one or two or three days, no ill effects are noted and the animal will not become sensitive until the necessary period of time has elapsed since the last dose. Also it is of much interest to note that a sensitive animal may be desensitized by the administration of very small doses of the protein which will produce a slight anaphylactic shock or none at all. This condition of desensitization usually is produced by the repeated injections of smaller amounts of the protein in order that the resulting symptoms shall be as mild as may be. They are repeated until there is no longer any reaction from the protein. Desensitization is a temporary condition, and when produced in this manner a sensitized animal may lose its sensitiveness through the lapse of a considerable time and become refractory, but a subsequent sensitization is produced much more readily if attempted again.

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 9, 10, 11, 1918.

Whether this is really a demonstration of the fundamental truth of that part of Ehrlich's side chain theory which describes the elaboration and the office of the antibodies of the second order, the amboceptor, or whether it is tending to corroborate the idea that a specific enzyme is elaborated after the effective exhibition of a foreign proteid with a consequent splitting of the proteid molecule and the liberation for chemical reaction of the toxic radicle of the protein, the so-called anaphylactic toxin, or whether these ideas are both wholly or partly wrong is rather far afield for the purpose of this paper.

Among the many interesting things that crowd a voluminous literature on the subject we might note that the process of anaphylaxis is a cellular process and that each individual cell of a sensitized individual is concerned in it whatever the process. Also that the smooth muscle fibres are the cells most affected and that during the crisis known as anaphylactic shock they are in a state of contraction, which accounts perhaps for the fact that atropine and the anesthetics are the most efficient and perhaps the only efficient antidotes in these conditions.

Whether the main facts of anaphylaxis, infection and immunity are explained satisfactorily by Ehrlich's theory of immunity, or by Vaughn's hypothesis of the toxic radicle in the protein molecule or by a combination of both, or by something more or less different from either, I shall not dispute. There remains to us sufficient facts from which to venture an hypothesis of our own concerning the treatment of some of these disorders which fall naturally into the group under discussion, and with the aid of a fairly active imagination to establish apparent parallels of disease and anaphylactic phenomena and as a line of therapeutics to attempt to create conditions which would seem to carry them out to a happy and logical conclusion.

We have usually considered that in the administration of bacterial vaccines we were in some way utilizing these phenomena in a more or less rational way, and certainly there are a great many technical and clinical facts that seem to **bear out this idea**. On the other hand there are a certain number of facts just as true, which if they really do not point in another direction, at least tend to cloud and obscure our understanding of the way these various facts are correlated.

In terms of the side chain theory of Ehrlich, an infectious disease produces symptoms until such time as the defenses of the body can develop sufficiently to neutralize the toxic agent and destroy the bacterial source of its origin.

In the terms of the anaphylaxis idea, the disease does not produce symptoms until after an incubation in which the noxious agent which has invaded the body, shall have had time to produce a sensitization at the end of which period the symptoms of the onset occur, corresponding to the phenomenon known as anaphylactic shock in animals artificially sensitized.

Immunity, in terms of the Ehrlich theory, consists in the immediate neutralization and destruction of noxious agents by the protective bodies created in the animal by a previous experience with the same agent. In terms of anaphylaxis, immunity consists in the immediate reaction of the sensitive animal with the consequent immediate destruction of the noxious agent at the portal of entry. This immediate reaction is considered to be a very mild reaction due to the very small amount of the noxious agent which usually serves to act as the infecting matter.

There will occur to you instances where these two ideas seem to overlap and to explain equally well certain phenomena and other instances where one idea fits the facts better than the other, and yet other groups of acts seemingly at a variance tend to the belief that only one or the other idea can be accepted.

In such a tangle of fact and fancy it would seem to be rather adventurous to dogmatically assume the truth of one idea or the other, but may we not embark upon a course of clinical experiment to ascertain if possible how far we may safely go in the direction in which it leads us?

In a certain class of rather widely dissimilar diseases it has seemed that there was considerable field for investigation along clinical lines. This group of cases includes hay fever, urticaria, some types of eczema, a number of the acute infections, as rheumatism, tonsillitis, quinsy, chorea, local infections in the skin, influenza, typhoid fever, vomiting of pregnancy, gonorrhea. Practically I believe that any acute or chronic infection, including tuberculosis, syphilis, actinomycosis and blastomycosis can be included in this list.

It seems to be pretty well accepted that a few of these diseases at least are due to sensitization of the body to some foreign protein not bacterial. And it seems to be also pretty well established that the various bacteria play some important part in the etiology of the various so-called infectious diseases named. Concerning the vomiting of pregnancy and eclampsia there does not seem to be the unanimity of opinion that exists as regards the other diseases mentioned.

The use of bacterial vaccines is probably the most widely accepted branch of the use of foreign proteids in therapeutics, and reports of its success vary almost as widely as the practice exists. The various techniques for the administration of bacterial vaccines vary widely also, and my personal observation has been that the average man who administers vaccine does it in the same way and spirit that he would administer a dose of strychnine, and that he expects much the same results. Disappointment is quite the usual thing.

In the treatment of a disease produced by the sensitization of an individual to a certain protein, it would seem to be the right procedure to make use of the phenomenon of desensitization and attempt to desensitize the patient by the injection of minute amounts of the specific protein. It is a sort of a "hair of the dog that bit you" proposition. Remembering that very small amounts of the protein are able to set up stormy reactions we attempt to gauge the dose so that the reaction will be at a minimum at the most, and if possible, *nil*. These injections are repeated every day or every other day with doses slightly increased each time until a fair dose no longer gives any disturbance. Then we may say that the patient is desensitized. Remembering also that the condition of desensitization is a transitory one, we will expect to be called upon to repeat the process at some future time. This seems to be the common experience of men who have undertaken the treatment of hay fever and asthma by this method. The exciting cause of the hay fever, *i.e.*, the specific pollen which is the irritant or sensitizer is discovered by testing the various pollens against the skin after the fashion of the Von Pirquet test, and when the specific irritant is identified injections are begun of very small quantities, every day increasing the dose a little each time. It is better to begin the treatment before the season at which the irritant pollen is at liberty in the air, as, by so doing, a certain degree of anti-anaphylaxis or desensitization will have been secured, and the symptoms will be much ameliorated or will all together fail to appear. My experience with this class of cases has been limited to four patients. One of these cases complicated with pulmonary tuberculosis and asthma was only partially successful, the symptoms being ameliorated, but the patient was quite miserable nevertheless. In this case the treatment was begun early in the summer before the hay fever season had set in. One other case similarly treated was a complete success, but the hay fever returned the following summer, though much diminished in severity, necessitating a

course of treatment during the attack. The other two cases were treated during the hay fever season with marked relief, though not with complete cure. Fortified by our previous experience and that of others we intend to begin the treatment this year before the season when these irritant pollens are at large.

Thus in the case of hay fever we are impressed with the idea that the constant presence of the sensitizing pollens in the air and hence the constant re-inoculation of the victim with the pollen excites a continuous train of anaphylactic symptoms in the sensitized individual. Hence the logical treatment would seem to be, to bring about a state of desensitization, or anti-anaphylaxis, transitory even though it may be, and to repeat the desensitization as often as need be with the hope of maintaining the patient in the desensitized condition after a few courses of treatment. Whether this will work out in that fashion or not remains to be seen. I am aware that the literature contains a number of cases reported, in which this end seems to have been achieved. However, I imagine that a lapse of time will be needed to allow the observations made to be verified.

In the consideration of asthma as belonging to the group of anaphylactic diseases it is necessary to differentiate quite sharply between true bronchial asthma, and certain groups of asthmatic symptoms which are associated, and many times apparently due to organic changes in other organs: notably asthma that is associated with nephritis, with organic heart disease, and with certain chronic pathological changes in the chest, as bronchiectasis, enlarged mediastinal glands, aneurysm and similar conditions. Granting the fact that persons who are subject to these organic diseases may just as well be sensitive to an extraneous protein as one who labors under no such difficulty. For the purposes of this paper we shall disregard all cases complicated by these organic conditions.

Asthma of the true bronchial type can often be demonstrated to be due to sensitization with some definite proteid. Perhaps it is oftenest due to the emanations of the horse, the dandruff from the skin of which animal is, in dusty weather, practically always present in thickly settled rural communities and in the air of the city streets. The cutaneous test with dandruff from the skin of the horse will demonstrate the sensitization of the individual, or the absence of it. In like manner the various food proteins may be tested one after the other. It is occasionally noted that an individual is sensitive to more than one protein, in which case it would seem to be good practice

to desensitize for both proteins. Horse dandruff, cat dandruff, emanations from feathers, from goats, from dogs, from wool are, according to the literature, all capable of producing sensitization. The various proteids in foods are also credited with being responsible for the condition in certain cases. Protein from oats, from yeast, from bread, from the various varieties of meat, shell fish and fish, tomatoes, strawberries and a few other fruits have all been noted by different observers as contributing to or causing these symptoms. Eggs, potatoes, milk, and a number of other foods have been noted. We have all of us noted the occasional case of idiosyncrasy to eggs or to strawberries, or to milk, and these cases often exhibit symptoms of anaphylactic shock with all the classical symptoms, the urticaria, the asthma and labored breathing, the purging and vomiting, and even occasionally convulsions. The ordinary attack of asthma is much less severe constitutionally because of the much smaller exciting dose than the amount it takes to excite a severe reaction such as seen in the cases of egg poisoning.

One case of true bronchial asthma which I was privileged to follow for some time had been afflicted since early childhood and had always been a sufferer at rather frequent intervals from a very stubborn eczema. During the course of determining the presence or absence of sensitization to certain food products, it was noted that at the time when the protein from bread was tested against the skin, that the local reaction was remarkably severe, and partook of the general characteristics of the eczematous eruption which was present on the rest of the body. This patient was desensitized to the protein from bread by daily hypodermics over about three weeks and prohibited bread or crackers or any wheat or yeast, to the great improvement of the asthma and the total disappearance of the eczematous eruption. The asthmatic attacks as such disappeared, but a chronic cough with some expectoration remained, and occasionally after catching cold the patient wheezes and has a tendency to become short of breath. A vaccine has been prepared from the sputum of the patient and we are now endeavoring to eradicate the remainder of the difficulty. It seems logical to suppose that after the persistence of the asthma over so long a time that pathological changes in the bronchial mucosa would appear which would favor very greatly the implanting thereon of an infection, or if you please, would favor the sensitization of the patient to one or more bacterial proteins.

In another case of bronchial asthma a large number of food proteids were tested against the skin without determining the reacting protein. The patient did not react to horse dandruff, or to that from the cat or dog. This case did however respond fairly well to a course of injections for autogenous vaccine. He would remain free from asthmatic attacks for five or six weeks. After five or six daily doses, given intravenously, it was apparently not possible to desensitize this patient permanently.

Another patient suffering with bronchial asthma reacted strongly to the dandruff of the horse and was apparently completely desensitized and perfectly well after thirty injections given practically on successive days. After the lapse of a couple of months he reports that he feels a little stuffy whenever he is out in the wind and we are planning to take up his treatment again.

Up to the present time it has been impossible for me to hold the interest and secure the cooperation of any urticaria patient over a sufficient length of time for any tests to be made, or any satisfactory conclusions to be drawn.

I occasionally see professionally a man who is subject to occasional attacks of urticaria of a very severe type. This man is about thirty years old, an inveterate user of tobacco, and he has a mouth full of decayed and pyorrhoeic teeth. He also harbors a pair of very badly diseased tonsils, and a pair of turbinates, which for size and sponginess should rank well up with the neighborhood's most horrid examples. Whenever this man exercises sufficiently to work up a brisk perspiration, he becomes ill, experiences a general malaise with a fever, as high as $102\frac{1}{2}$, and breaks out after a few hours with the most beautiful and classic hives that one is privileged to see. His past experience has shown him that when he consults a doctor in this situation that a cathartic is usually administered, and is followed in the course of a few hours by a perspiration and a disappearance of the urticaria. The whole course of the disturbance is over in twenty-four hours, and he promptly loses interest in its possible etiology. In my present state of mind I am leaning toward the belief that he is harboring in a tooth, a tonsil or a nasal cavity a mass of infectious material to which he is already sensitive, and that the event of his increased and unusual exertion, is the factor which determines his absorption of the exciting dose of the anaphylactic agent.

There is another class of cases in which I believe the idea of anaphylaxis might prove to be the foundation of a successful and logical thera-

peusis, and that in a group of disorders grouped under the term of the toxemia of pregnancy. Some time ago while laboring with an unusually painful case of this kind with persistent vomiting, it occurred to me that a woman with the toxemia was probably deficient in some way in performing the duties of prenatal motherhood. Might it not be possible that her deficiency lay in the direction of a failure to elaborate some substance or enzyme necessary to neutralize or destroy some noxious matter introduced into her circulation as a result of her pregnancy? Would it not seem reasonable to suppose that a pregnant woman who was not toxic from her pregnancy should be assumed to have been successful in elaborating this necessary agent? And might we not assist the toxic agent by transferring some blood serum from the normal to her toxic sister?

It proved to be somewhat of a problem to secure a donor who was at the same time pregnant and not afraid of marking her baby or chancing some other terrible accident but it was accomplished and this procedure has been twice entirely successful in my hands. It seems to be necessary to defibrinate the blood and inject it directly into a vein. From one to two ounces should be used and one injection suffices, as in neither case did the vomiting recur, and in both cases a speedy convalescence was established. Except for the fact that perhaps the psychic factor was the determining one, or perhaps that I am too confidently claiming "*post hoc propter hoc*." I am pleased to believe that this method is a logical and most efficacious one of combatting this stubborn condition.

I will agree however that this condition might well be considered as being an anaphylactic state in which the placental protein is the sensitizing agent. However, admitting this, I also agree that it will take some further explanation to elucidate the production of sensitization by a refractory serum and not by repeated and minute doses of the sensitizing agent. I have prepared a placental extract and am waiting for a chance to attempt to desensitize some of these cases of toxemia with the idea that perhaps something can be demonstrated to establish or disestablish the relation of these toxemias to the sensitization by placental proteins.

With regard to the acute infections I confess that I fail to see that the known facts concerning anaphylaxis can be entirely co-related with our clinical knowledge of some of the acute infections. I have been interested however to make some crude clinical investigations in the treatment of acute infections along three different lines. First the use of bacterial vaccines with

the idea and object of exciting the formation of specific anti-bodies. These are usually administered at five to ten day intervals in increasing doses given with the idea of creating sufficient reaction to cause some slight malaise within the next few hours. Second: The use of specific or autogenous vaccines but with the idea of desensitizing the patient to particular bacterial protein to which it was assumed that he was sensitive. These vaccines were administered in rather small doses intravenously and given every day or every other day with the idea of limiting the doses until it would cause no reaction or discomfort and that by its repeated injection at short intervals desensitization would take place. At first I had some qualms about using the vaccine this way feeling that if the anaphylotoxin idea were wrong that I might do some serious harm to my patient. I have used this method on a number of cases of influenza, gonorrheal urethritis, acne, chronic bronchitis, paronychia, furuncles, etc. Third: The use of a foreign protein that has no specific relation to the etiology of the infection to be combatted. In these cases I have used typhoid vaccine in the treatment of rheumatism after the example of Dr. J. L. Miller. Gonococcus vaccine, normal horse serum, and the so-called phylacogens were the agents used. In these cases the amount was usually small, and was injected by choice into a vein. Occasionally the subcutaneous method was employed in which case the size of the dose was from three to six times as large as the corresponding dose intravenously. It was noted that the usual reaction to the intravenous injection of any foreign proteid in sufficient dose was a chill with marked fever, usually moderate prostration and occasionally vomiting. The area or region involved in the inflammatory process to be combatted, showed a definite increase of inflammation in a relatively short time, and circumscribed inflammations would not infrequently break down, form an abscess and evacuate the pus by rupture in the course of twenty-four to thirty-six hours. This is the usual rule in peritonsillar inflammations. As near as I am able to judge it makes no difference in the result obtained which agent is used provided one administers the optimum dose and repeats the injection with an increased dose each time. It seems to be pretty well established and capable of repeated demonstration that a rather marked degree of amelioration of the various acute infections is possible by this treatment. On several occasions I have felt that rheumatic fever was cut short and greatly relieved by this treatment. Occasionally also it does no apparent good at all, and in those cases

in which the benefit is manifest it seems that there is a point past which it is possible to produce no improvement and relapses are quite common.

There is some question as to the nature of the reaction occurring after the injection of these proteins. The reaction appears quite promptly as a rule, usually in ten minutes, rarely not for an hour. It might be considered to be an anaphylactic reaction if the ordinary manifestations of general infections are to be so regarded. It is interesting to note that the blood shows a leucopenia in anaphylactic shock experimentally produced, while the rule in the acute general infections is for the blood to show a leucocytosis. And, those diseases which show a leucopenia, typhoid, tuberculosis, measles, malaria, and influenza, have nothing clinically in common which would tend to class them as anaphylactic diseases to the exclusion of the others. Also an eosinophilia is usually shown in man in anaphylactic shock but which I have not seen in these cases. This reaction is usually marked by leucocytosis.

With regard to the two methods of using bacterial vaccines I am not prepared to say which method is the most efficacious. Five cases of gonorrheal rheumatism had an average duration of thirty-one days when treated with the vaccine in doses sufficient to produce a reaction and given at intervals of six to ten days. Four cases of the same diseases had an average duration of thirty-three days when treated with a daily dose small enough to produce no reaction. One of these cases was complicated by an orchitis and the rheumatism subsided in thirty-nine days. All these cases were given the usual treatment of prostatic massage and irrigations.

Twenty-one cases of gonorrheal urethritis have been treated with the full sized doses of vaccine at five to seven day intervals, with an average duration of twenty-eight days. Nine cases were given the smaller doses every day with an average duration of thirty-six days. One of these cases also developed an orchitis as a complication and his discharge subsided on the seventeenth day. Six cases of acute gonorrheal urethritis were treated with intravenous injections of typhoid bacterin beginning with fifty million and increasing the dose each day sufficiently to produce a chill each time. In two of these cases the discharge subsided by the sixth day. In the remainder it diminished rather rapidly for several days but did not completely disappear until after the twenty-ninth day, one case persisting until the forty-second day. Irrigation of hot permanganate were used at the same time in all these cases.

Except in gonorrheal rheumatism as cited above there has been no attempt to use vaccine in rheumatism or rheumatic fever. Typhoid vaccine and normal horse serum have been used, also the so-called phylacogens as has been noted above with rather a limited success. The same statement may be made concerning the use of non-specific proteins in any situation I believe. Vaccines when used in the doses which excite reactions and at intervals of several days, certainly do produce favorable results, though I am not prepared to say that a much larger experience than mine would not demonstrate that the correct way to administer them is in the small doses, frequently repeated.

To conclude I would remark that while I have suggested the possibility that anaphylactic phenomena, infections and immunity may possibly be the various different manifestations of the same process; that my poor observation has discovered for me, and what I have been able to gather from the literature I am inclined to assume that anaphylaxis and infections and immunity probably are independent processes as a general proposition. It is possible if not probable that they may overlap in places, may even be interdependent in certain of their elements, but that they are not merely phases of the same process. I am also inclined to believe that there are some other processes or process which is also more or less closely related, but actually independent of these two apparently separate processes. I assume that the clinical evidence of this third process is the violent reaction which immediately follows the parenteral administration of an adequate dose of a foreign protein, with a resulting leucocytosis, and in the presence of acute infections the marked clinical amelioration of the symptoms and manifestations of the disease. This reaction occurs in unsensitized individuals, and the improvement antedates by some time the formation of antibodies necessary for the neutralization of the toxin or the destruction of the bacteria according to the theory of immunity of Ehrlich.

INJURY TO THE FACE WITH INVOLVEMENT OF THE MAXILLARY ANTRUM*

J. B. NAFTZGER, M.D., Sioux City

Fractures of the superior maxilla are not numerous in comparison to the inferior maxilla. The most frequent fractures in injuries of the

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 9, 10, 11, 1918, Section Ophthalmology, Otology and Rhino-Laryngology.

face, excluding the inferior maxilla, is a fracture of the nose. Nasal fractures occur as a rule, at a junction of the cartilaginous and bony articulation but often occur higher up and also involve the nasal process of the superior maxilla. Fractures of the superior maxilla are as a rule from direct violence, *i.e.*, from a blow on the side of the face driving the malar bone into the maxillary antrum.

Some authors maintain that the malar bone is always fractured in conjunction with the superior maxillary. During the past year I have had the opportunity to treat seven cases of injury of the face, involving the maxillary antrum and it is the purpose of this paper to briefly report these cases with the various phases of trauma to other parts and the sequelae.

Case No. 1. Male, age fifty-eight, farmer—Patient was standing behind a tree watching an expert dynamite stumps; he peered around the tree just in time to be struck in the face by a flying stump. He was brought within a few hours to St. Joseph's Hospital. Examination showed nose crushed, compound fracture just below nasal process, frontal bone; left nasal process superior maxillary fractured, depressed fracture infraorbital ridge and a large wound extending through the skin and soft tissues into the anterior antral wall; the infraorbital ridge and the wall of the antrum was elevated through the wound in the antral wall; the wound in the skin sutured with a drain and an opening made into the inferior meatus of the nose to establish drainage from the antrum; nasal splints were introduced and anti-tetanic serum given. The wound united nicely; later had some eversion of the lower lid.

Case No. 2. Girl, age three years—Was kicked in the face by a horse. Examination at the hospital a few hours later showed: nose crushed; wound through skin and soft tissues over the anterior wall of the antrum apparently cut by the horse's shoe; antral wall depressed; the lateral wall of the nose was torn from bony attachment. An elevator was pushed through the inferior meatus into the antrum and the fracture elevated; the wound in the skin closed with drain; nasal bones elevated and splints introduced. A month later a fistula opened from the antrum through the wound in the cheek and a purulent dacryocystitis also existed. Lacrymal sac extirpated and antrum curetted through inferior meatus; the fistula closed and the patient had no further trouble.

Case No. 3. Male, age twenty years—Kicked in the face by a horse. Examination at hospital within a few hours showed: depressed infraorbital ridge and anterior wall of the antrum on the right; fractured nose; lacerated wound extending entirely through the upper lip on the right; to about the middle of the lateral nasal wall. Sub-conjunctival

hemorrhage. X-ray showed line of fracture about through the malar and superior maxillary articulation extending down through the antral wall into the alveolar process. There was a slight disturbance with the alignment of the teeth. An opening was made into the antrum under the lip, as in a Denker operation, the depressed bones elevated and drainage established into the inferior meatus; nasal fracture reduced. A few months later very little deformity existed except a purulent dacryocystitis which later required extirpation of the sac.

Case No. 4. Male, Age forty-five years—A Ford car over-turned pinning the patient underneath. The blow evidently struck on the side of the face, as the supraorbital and intraorbital ridges were both depressed, as was also the anterior wall of the antrum. Nose was fractured and displaced to the left; practically no breathing through the nose. I did not see the patient until two months after the accident and he came to me complaining of diplopia; poor nasal breathing, pain in the region of the right antrum. X-ray showed cloudiness of the right antrum. There was considerable limitation of the movement of the right eye up and out. The antrum was opened as in a Denker operation and the anterior wall elevated as well as possible. It was impossible to elevate the orbital ridge. The nasal septum was fractured and straightened sufficient to give good nasal breathing; antrum drained through the nose. Results: one month later antrum infection had subsided; good nasal breathing; still had considerable deformity of nose and face and diplopia; the diplopia was corrected with prisms so the patient has now resumed his work, as a bank clerk.

Case No. 5. Boy, age ten years—Several years ago had injury to face by kick from horse. Referred to our office because of the purulent dacryocystitis; right eye; with external fistula. Examination showed septum of nose fractured and deflected sharply to left; considerable external deformity of the nose and some depression over antrum. Operation; extirpation of the tear sac. A modified West operation draining into the middle meatus.

Case No. 6. Male, age forty-six years—Was overcome with gas while working in a lighting plant and fell striking against the engine—the force was evidently applied to the side of the face; the malar bone was depressed at about the articulation of the superior maxillary and fractured through the antrum. X-ray showed cloudiness in antrum which on irrigation through the inferior meatus proved to be decomposed blood and serum. As there was considerable depression of the anterior antral wall an opening was made, as in Denker operation and the depression elevated; drainage established through the inferior meatus. This patient complained of numbness over the right side of the nose, right half of the upper lip and side of face from involvement of the infraorbital nerve. It is probable that the nerve was compressed in the canal by the fracture.

Case No. 7. Male, age twenty-five years—Kicked by horse; fractured nose; infraorbital ridge and anterior antral wall depressed. Modified Denker operation. Antral wall elevated; nasal bones straightened. Case made good recovery.

To Summarize—Five of the seven cases were due to direct violence, *i.e.*, force applied directly to the parts; in two the force was probably applied to the side of the face. In all the cases operated the anterior antral wall was fractured in several places, *i.e.*, there was a number of small fragments of bone depressed. The fragments were pushed into place as carefully as possible and with the exception of one case there was no necrosis. In this case the child three years of age, several spicula of bone were removed at the second operation. Three of these cases later developed purulent dacryocystitis and one had involvement of the infraorbital nerve. The x-ray showed blurring in the antrum of all cases and blood was found in the antrum; in Case No. 4, which I did not see until two months after the injury, there was pus in the antrum.

My attention was called to these cases some years ago when I had an opportunity to observe the marked deformity from improper treatment of this class of injuries; among those engaged in mining industry. This did not apply alone to personal appearance but the function of the nose was impaired and there was usually a chronic sinusitis. It appealed to me that the work should be done by a rhinologist, who thoroughly understood the anatomy of the nose and accessory sinuses, rather than by a general surgeon. I was rather surprised however, on looking the matter up to find practically no literature on treatment of these cases.

Our deductions are, when there is a fracture with depression of the anterior wall and blood in the antrum, it is policy to open through the anterior wall, elevate the fracture and establish drainage through the nose. The deformity resulting from these fractures if not attended to is very noticeable and extremely hard to repair later. In elevating the depressed bones I have found a round, curved, Kelly Uterine Dilator of great service, as there is little danger of injuring the soft tissues and mucosa with the blunt end of this instrument and the curvature gives accessibility to the parts without making a large opening into the antrum.

Discussion

Dr. F. W. Dean, Council Bluffs—I have not had many cases of the kind referred to—two only, I think. Most of those cases were the result of being hit in the face by an Irishman, instead of being

kicked by a horse. The result was about the same, except that in those cases there was just a depression of the infraorbital ridge, and I opened up the anterior wall of the antrum and in both cases elevated the bone with the finger. There was some blood in the antrum and I cleaned it out and then sewed up the opening without any other drainage, and did not have any further trouble with either one.

Dr. Harold Gifford, Omaha—I would like to ask a little information on this point; I think Dr. Naftzger's experience has been quite unusual. In the course of a practice of thirty odd years I have not seen as many cases as he has, and in fact, I have not seen any that I have felt called upon to bore into or do very much for. His results certainly show the advantages of his methods. The case that I wish to refer to was that of a lad who was riding down hill on a bicycle when he encountered the thill of a buggy which was being driven in the opposite direction, and the thill went in at the left side of his face, went through the antrum to an indeterminate depth, and when he was brought to me he was entirely blind in the right eye, and the eye was turned out to the extreme limit of the orbit. The thill evidently went through, ranging upward and outward, clear across the nose, and pushed in the wall of the opposite orbit in such a way as to compress the optic nerve and paralyze it; in fact, he had no motion of the eye whatever. I did not see him for some days afterward, and the wound healed up without any particular deformity, except that he had a big scar. It was a year and a half before he came around and wanted anything done for his appearance, and I then attempted to restore the eye to something like its normal position. I found, to my great surprise, that in spite of cutting the external rectus, I could not possibly get that eye turned back to anything like the median position. With all the force that I could use on that eye, grabbing hold of it with a sharp-toothed forceps, I could not rotate it more than a few millimeters toward the center; it was absolutely stuck out there. I left the boy in about the condition that he was. He would really have been a good deal better off with the eye taken out. The question is, what was the explanation of that condition? I thought possibly it was due to adhesions between the wall of the globe and the wall of the orbit, which may have been the fact; but it has also occurred to me that perhaps it was due partly to this: that the eye was turned out so far that the superior and inferior recti muscles slipped over the posterior pole of the eye in such a way as to act like a sling, contracting around behind the eye so that they formed an impenetrable obstacle to getting it back. I thought if I had cut both those recti muscles I might have been able to swing the thing back. It also occurred to me that the thing to do would have been to get at it right away, instead of waiting for these inferior and superior recti muscles to become fixed.

Dr. W. W. Pearson, Des Moines—We all, no doubt, have had our experiences along this line. I recall one case which I saw a number of years since, which was somewhat similar to Dr. Gifford's just described. A boy riding a wheel ran into the back end of a buggy. In this case I think the buggy top was down, and the hinge struck him just below the infraorbital ridge, and was driven down I think perhaps an inch into the antrum. I saw him several days later. The eye had dropped down, and of course he had diplopia. He declined operation. The antrum did not suppurate. An interesting feature was the interference with the drainage. While there was no purulent dacryocystitis, it was apparent that the conjunctival sac was lowered. It necessitated the wearing of a patch. The vision was not impaired. I saw him two or three years later, when he had a foreign body imbedded in the cornea. It resulted in a bad corneal slough and anterior staphyloma, and ultimately necessitated the removal of the globe. In these cases I think one of the first things to determine is the extent of the injury: whether, as in Dr. Gifford's case, the fracture has extended back along the floor or any portion of the bony orbital formation in such a manner as to impinge upon the optic nerve. In Dr. Gifford's case I would have been tempted to go in with the operation at the side and endeavor to raise the bone. I don't know how successful I would have been, but that would have been my thought. It is possible that the nerve was so damaged that it would not have recovered, but with a condition so vital to the sight of the eye I would have been tempted to go further. I have had the experiences that Dr. Gifford spoke of relative to the impossibility of turning the eye in. I have just gone along with my dissection, dividing the muscles. Tenon's capsule and everything, and turned the eye. A couple or three years since a young man in the dark ran a hook into his eye. When I saw him a few hours following the accident the body of the muscular part of the internal rectus was torn square in two. I said to him and his attending physician that "the function of the muscle is impaired; you will never have ability again to properly converge the eye." I sutured the muscle, properly directed the eye for the time being, but it afterwards necessitated resection of the opposite muscle. Today when the man is looking straight forward; his vision is perfect; he only has a diplopia when he turns his eye right and left. He came up for examination and has been passed in the conscription. He was referred to me as a member of the advisory board in Des Moines and I discussed the question as to whether he should be passed. I believe I sent him to the base hospital so that Major Todd might see him, and told Dr. Downing, who was familiar with the history of the case, to look him over. They accepted him. Cases of this kind are extremely interesting. It is a little outside the subject, but about ten years since I saw, several weeks following the injury, a boy sixteen years old who had been horned in the eye by a cow. There

was nothing whatever indicating any impairment of the eye. The motion was perfect in every direction, but he was blind. A glance in with the ophthalmoscope revealed the absence of the optic nerve; it had been completely torn loose from the globe.

Dr. L. W. Dean, Iowa City—In cases of fracture of the external wall of the antrum, if the lower two-thirds of the antrum wall is crushed in there is no reason why we should concern ourselves with any operative procedure directed from within. Such fractures will take care of themselves, ordinarily. In those cases where a blow has been delivered from above, where the malar bone has been forced into the antrum so that there is a noticeable depression below and external to the orbit, the case should be operated and the fragments replaced. If the fracture is comminuted and involves the upper portion of the antrum wall, and the inferior margin of the orbit, it is also well to replace these splinters by an operation from within. I have found it quite impossible to satisfactorily replace these pieces of bone, or replace the malar when it is depressed by inserting a hook through incisions in the skin and pulling the pieces back into position. In the last two conditions I make the same incision as for a Denker operation; enter the antrum, pry the malar back into position or replace comminuted pieces of bone, then pack the antrum with gauze; keep it packed for several days. In our cases there has been no difficulty in securing healing of the wound from the antrum into the mouth. Our cases have given good results except in those cases where there has been infection with discharge of small pieces of bone from fistulae in the skin. Much interesting work is being done along this line in the Army Medical Service, and I anticipate that soon following the war we will have a literature which will cover all these conditions fully.

Dr. Naftzger—I have nothing further to state except to say that when we first saw these cases it was on account of the deformity. I happened to see a few of them, from the mining region, in the Black Hills, where the depression had not been elevated, and there was retraction of the globe and a sunken eye. Where one side of the face is depressed it does make a ghastly appearance. For that reason, if for no other, one would want to replace these fractured parts. I have been surprised at the kindness with which the fracture unites, due to abundant blood supply to the parts.

PLAGUE IN INDIA*

B. SINGH JAIN

History and Geographical Distribution—History of plague is an old, old story in India. Reference to the plague in rats is made in "Bhagvat-Purana," one of the ancient scriptures of the

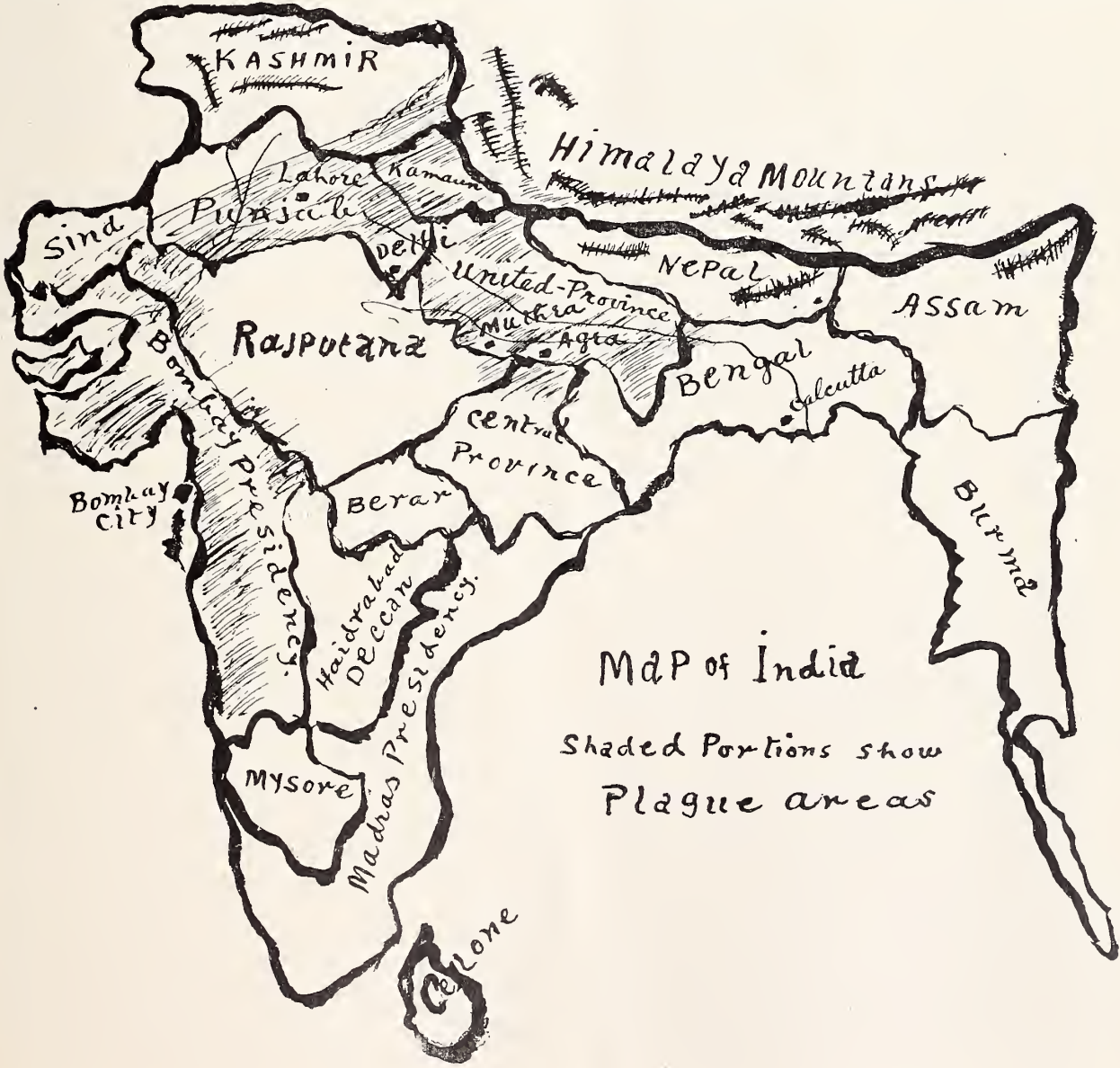
*Paper read before Senior and Junior Classes of Medicine, State University of Iowa Medical School.

Hindus, probably written between the second and fifth century A. D. The people are there instructed to quit their homes and go to the plains as soon as they observe that "rats fall from the roof above, jump about and die." The instructions contained in this ancient book are followed even to this day in many parts of India, whenever an unusual mortality is observed among rats. The hillmen of Kumaun and the Marwaris, an important trading community, would instantly quit a house on seeing a dead rat, in a majority of cases.

The disease again is known to have been prevalent in India, in early part of fourteenth century. For Ibin-Batuta, an Arab traveler, in his book of travels observes that the army of Muhammad Tughlak mostly perished of the disease in Malahar. He himself saw and was attacked by the disease at Muthra, Muhammad Tughlak's capital, in the year 1332. (Travels of Ibin Batuta, trans-

lated from the Arabic manuscript by the Rev. Samuel Lee, B.D., London, 1829.)

The disease was spoken of as ta'um, a name still given to plague in Turkey, Persia, Arabia and Upper India. But the best description of the epidemic is given by the Emperor Jahangir himself, as he observed in Agra in 1615, A.D. In one passage he succinctly states that "a sick rat was seen in a certain house and that the rat was killed by a cat which belonged to the daughter of the owner of the house. A slave who was ordered to remove the body of the rat, was subsequently affected with plague and later the girl who owned the cat, her mother and finally all the members of the family were seized with the disease. And this continued to devastate the country for eight years." Another epidemic in the reign of Aurungzeb, 1688, which lasted seven or eight years. The first of these two epidemics began in the Punjab, at Lahore and destroyed



many villages and parganas; the second, seventy years after, was felt in the City of Bijapue, which Aurungzeb had just captured and in which his army was encamped, including 15,000 cavalry. It is said to have extended over the Deccan and as far as Ahmedabad and Surat.

But in the Northwest part of India, the disease has been endemic since 1823, *i. e.*, in the districts of Kumaun and Gharwal on the southern slopes of the Himalayas and known there as "Maha-Mari" Great-Death—a name still used in the greater part of India. However it was the year 1894 which marks the epoch in the history of the disease for its pandemic nature of extension and showed, according to Osler that "The Black Death of 1665, was still virulent." There was trade between Bombay and Hongkong, so the disease came in September, 1895 and had its firm root in that city and gradually made its way to the Punjab and the United Provinces. As these had been the endemic seats of the disease, Osler states that from 1895-1911, five and one-half million deaths from plague occurred in the Punjab, Bombay and the United Provinces with a population of one hundred millions, while in the remaining provinces with a population of two hundred millions there were only about two millions of plague deaths; while eastern Bengal and Assam remained free and very few cases developed in the Madras presidency.

Etiology—In September, 1895, plague entered the City of Bombay and 27,000 deaths occurred in nine months, out of her then population of 820,000. In the beginning of the disease, nothing was done. The local board and municipal authorities remained silent, lest the world hear of it and business be injured. The people took fright and various fantastic stories were circulated as to the cause of the calamity. (1) That it was due to the wrath of the Deity. (2) That its original cause was due to the insult done to Queen Victoria's statue, because some miscreant had hung a string of slippers around the neck and daubed the body with some tar, which was a great sacrilege to the devoted heart of the people. (3) That it was due to soil poison, so the rat, which is supposed to be a symbol of sagacity by the people, is surprised by the underground venom and tries to escape in a state of delirium. And so forth until at last, the Indian government stepped in and a plague commission was invited from England in 1898, which came to the conclusion that infection of plague always entered through the skin. "No rat, no plague" became a sanitary password. But the practical elimination of the rat was impossible, especially in a country where most of the communities would

hate to kill rats or any other forms of higher animals and still less then when they saw that rats like themselves were the victims and not the cause of the disease. They looked upon the death of the rat, the signal of the approaching epidemic. So "run away" from the disease became the safest means of escape. However, I have seen the fumigation of houses being done, Phenol oil and rat traps being sold at low prices. This was practiced mostly in municipal towns and cities while the mortality was greatest in the villages, where the houses were mostly of mud and unburnt bricks and the stables, barns, grain stores were so close together. This is the sort of condition which Osler describes as fifteenth century conditions in India. The result was that the villages were either deserted or depopulated.

Prophylaxis—When the epidemics of 1905 and 1909 broke out, Haffkin, the Indian Court Bacteriologist working at Kasauli, had brought out his serum. This was first tried on the prisoners in the jail, in January 30, 1897. Out of 170 patients, who were not inoculated, there were twelve cases and six deaths; while out of 150 who were, there were only two cases and no deaths. Like smallpox vaccination, Plague-Haffkinization proved very successful wherever it was tried. In 1911, I heard a headman of a village say that "no deaths occurred in his village community among all those who were inoculated and those who took sick, recovered." But the means and staff for general village inoculation were so inadequate and epidemics so quick, that people died, before they had a chance to take inoculation or "run away." Not a single case developed among the students of my old college at Delhi, who were all inoculated because a rat was found staggering and dying in the boys' dormitory.

Symptoms—Fever, tenderness in the groins, later enlarged glands called "Goli or gilty" in the vernacular. In some cases diarrhea is marked, while in others constipation. Maniacal delirium is most often seen. There is a general belief among the people that those who show buboes, may or may not recover, while those who don't, die surely. These latter are called "quick" cases. Thirst, general pain, uneasiness, in short all the general symptoms of acute septicemia occur. The cases may occur singly in a family or several simultaneously. I know a family in my home town where five deaths occurred within eleven days. There is a common saying that "plague attacks the adult, the working man, the pick of the society, while it lets the old, the enfeebled alone," which is unfortunately most often the case.

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa

Publication Committee

D. S. FAIRCHILD.....Clinton, Iowa

W. L. BIERRING.....Des Moines, Iowa

C. P. HOWARD.....Iowa City, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa

T. E. POWERS.....Clarinda, Iowa

W. B. SMALL.....Waterloo, Iowa

SUBSCRIPTION \$2.00 PER YEAR

Books for review and society notes, to Dr. D. S. Fairchild, Clinton. All applications and contracts for advertising to Dr. T. B. Throckmorton, Des Moines.

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII October 15, 1918 No. 10

**HONESTY AND CAPACITY OF MEDICAL
MEN ON EXEMPTION AND ADVISORY
BOARDS**

To secure men physically fit for military service men are examined by the medical examiner of draft boards, and a large per cent. examined by the first, or board examiner, are referred to an advisory board presumably composed of the most skillful and experienced physicians in the state. After this examination the soldier is accepted or rejected by the exemption board. If the soldier is accepted he is sent to camp—if the soldier is not given deferred classification for other reason—another examination is made at camp and the man finally accepted or rejected. It is alleged the element of error is too great. If there is any way to measure difference of opinion in relation to a man's fitness for a soldier it will be very helpful to make it public. For instance, 25 to 35 per cent. of men coming up for examination have some degree of flat feet, even by experts there is a difference of opinion as to which man should be rejected and which man should be accepted. Again, as to apparent muscular development and disability created by old fracture with degrees of anatomical deformity and functional results, exaggeration on the part of the examined, and as to apparent chest development. This is all shown by the instructions, other points might be mentioned. We have examined the published reports of camp rejections by different states and find that Iowa from February 10 to July 10, 1918 has 3 per cent. rejections at camps. New

Jersey with the best showing has 1.93 per cent., Delaware 2.49 per cent., District of Columbia 2.12 per cent., Texas 2.20 per cent., Indiana 3 per cent., Kansas 3 per cent. and up to Alabama with 17.46 per cent. It is a question if any other activity shows a smaller per cent. of difference of opinion, we are unable to say what the measure of error on the part of the camp examiners may be, but it must be something. If the question could be absolutely measured by the tape line the problem would be simpler, but we are sure this would be impossible. If the personal equation of men could be determined, the responsibility could certainly be fixed. It is the plain duty of examining physicians to observe the greatest care for obvious reasons, but to assume that the error is all on one side is certainly unfair. We must insist that doctors should not be held to a greater accountability than other classes, and if any other class has shown a greater degree of willingness to serve than doctors and for less rewards we are not informed who they are.

While difference of opinion in medical matters and in all matters of opinion will continue to exist, two things are evident, first; to hold for service all men who should under the draft provisions be selected provided they are physically fit, and to determine their fitness by a careful examination, giving each man time enough to discover the points insisted on by the regulations. The examiner should not be disturbed by hurry up orders the fear of criticism, and reject men who are physically fit for there is danger in always giving men the benefit of the doubt, second men should not be accepted because the examiner is of the opinion that the individual man is physically able in the face of the instructions, for he must remember that the camp examining board is the court of last resort. To settle questions of doubt there should be consultations between the various local boards of examiners before a doubtful case is finally accepted or rejected. No harm can come from a little delay and repeated examinations. It has taken us some little time to decide what the true physical and mental requirements are for an efficient soldier in a great army when the limits of man power are in doubt. The questions of general military service, limited service, and general remedial conditions have been slowly worked out. It is safe to say that those near the top were at a loss to know what was the best course to pursue in organizing a great army and no doubt made some mistakes and from what we have been able to make out are willing to forgive some of the mistakes we at the other end of the line have made and are only insisting that we work as diligently as they have in correcting them.

A DUTY CONFRONTING STATE BOARDS

In the present national emergency state boards of medical examiners are in position to render a positive service. They should make it clear—and several have already done so—that the graduation of high-grade senior students one or two months earlier than usual will not be permitted to count against such graduates when they later apply for license to practice medicine. Such students, following graduation, are to be immediately enrolled in active military medical training, either for the Army or Navy Medical Service. Such training should be acceptable to all state boards as the full equivalent of the work which otherwise would have been obtained in the medical school. Some states also have rules against the giving of continuous sessions by medical schools, and these rules should be altered should the demand for medical officers become urgent. By beginning the next session soon after the close of the present session, medical colleges could graduate the present third year or junior students in January or February, 1918. Students graduated under such an arrangement in a national emergency should not be penalized when they later apply for licenses.

THE HEALTH OFFICER AND THE BIG FIGHT

It is said to take nine men working "over here" to keep one soldier fighting "over there." Clearly, therefore, it is wise to keep the nine workers husky and working as well as the one soldier.

Which health officer should stay at home and who should go to war? How is the nation bearing up under the war-strain? What are the special war-time health menaces of the civil population, and what are we going to do about them? What headway are we making against the venereal diseases? These are the questions to be considered at the convention of United States and Canadian sanitarians at Chicago, October 14-17, to be held under the auspices of the American Public Health Association. Some of the military sanitarians who will address the meetings are Surgeon General Gorgas, Colonel Victor C. Vaughan, and Major William H. Welch of the Army Medical Corps. Other speakers at the general sessions will be George H. Vincent, president of the Rockefeller Foundation, Dr. Charles J. Hastings, president of the American Public Health Association, Dr. W. A. Evans, Assistant Surgeon General Allan J. McLaughlin, U. S. P. H. S., Dr. Ernest S. Bishop, Dr. Lee K. Frankel, Dr. Frederick L. Hoffman and others.

There will also be papers upon laboratory, industrial hygiene, vital statistics, food and drugs, sanitary engineering, sociological, and general health administration subjects.

As the health of the civil population has a direct bearing upon the winning of the war, mayors and governors are being requested to send their health

officers to the conference in spite of the present high cost of government.

The final program will appear in the American Journal of Public Health appearing September 25. For further information write to A. W. Hedrich, secretary, American Public Health Association, 1041 Boylston street, Boston, Mass.

WHY SHOULD THE SURGEON GENERAL APPEAL FOR MEDICAL OFFICERS?

Of the 146,000 doctors in the United States, it is a safe calculation that at least 70,000 of this number are within the age limit, from twenty-one to fifty-five years, and are physically and morally qualified to serve as Medical Reserve Corps officers.

Why, in view of this fact, the Surgeon General's office should be hard put to secure a sufficient number of medical officers to supply immediate demands and to furnish a reserve force of between forty and fifty thousand doctors is not quite comprehensible.

Every qualified physician, knowing how essential his services are to his country at this particular time, should consider it not only his duty, but a privilege to take part in this glorious struggle for humanity and democracy.

This is the time when individual opinion must be sacrificed for the benefit of the whole and the time is near when every doctor must be in one or two classes; either a member of the Medical Reserve Corps, United States Army, or in the Volunteer Medical Service.

If you are between the age of twenty-one and fifty-five years, and there is a doubt in your own mind as to whether you are qualified or not, let the Surgeon General determine this matter by applying at once to your nearest medical examining board for a commission in the Medical Reserve Corps.

ONE FORM OF VOLUNTARY SELECTIVE CONSCRIPTION OF PHYSICIANS

The problem of supplying the required number of officers for the Medical Reserve Corps, without working "serious hardships on any community, manufacturing concern, or any other civil activity," is being solved, not by any hard and fast or harsh plan, and in applying it all over the country, but by simply keeping the principle in mind and applying it where and in the manner best suited to the conditions that exist in the community. A plan workable in one state may be impracticable in another. What may be an ideal scheme in Kansas or Nebraska might be impossible in New York or New Jersey. Among those being put to a practical test is that proposed by Johnson County, Nebraska. The members of this society have agreed that those under fifty-five years of age will apply for commission in the Army or Navy and will agree to accept the commission if granted. The action of this individual society, however, was taken with the understanding that it should

be obligatory only in the event of the remaining counties of the Councilor District adopting it. This as we understand, has been done by all the counties in the District. The plan outlined calls for a committee composed of one representative from each of the county societies of the District, with the Councilor of the District acting as chairman. This committee, therefore, represents not a small community, but a definite and sufficiently wide territory to eliminate personal prejudice or personal influence; at the same time it has a knowledge of the actual conditions existing in every part of its territory. The plan is really carrying out the principles underlying the selective service regulations. It is an ideal voluntary conscription of the medical profession by itself, one that recognizes the needs of the community and the social condition of the individual practitioner.

AMERICAN HOSPITAL NEAR FRONT LINES

A report from the American Army in France to the Associated Press describes some of the work of the American hospital units near the front. They have won high praise by the establishment of a non-transportable field hospital only a short distance from the front line, the first of its kind to be introduced. With this hospital and equipment it has been possible to perform operations that have hitherto been impractical at the front, and they have thereby been able to save the lives of many more soldiers than could otherwise have been done. Of 155 cases recently admitted, operations were performed on 118 men and the mortality was only 30 per cent., whereas under the former methods a mortality of 80 to 90 per cent. would have been accepted.

VISUAL STANDARDS

W. H. Wilder, Chicago (Journal A. M. A., July 27, 1918), describes the visual standards adopted in the United States Army for recruits for different kinds of military service. He compares them with those of the British, French, and colonial armies and shows that so far as they go England, Canada, France and Belgium will be able to take into the military service a larger proportion of men of military age than will the United States. Unquestionably we are losing for military service many valuable possible soldiers on account of their slight visual defects. Wilder calls special attention to a condition that seems to him should be recognized in our system of visual standards, especially in these war times. He refers to the condition which for want of a better term we call congenital amblyopia of one eye. Any one who has carefully examined many eye cases in the cantonments must have been struck by the frequency of this condition, the degree of amblyopia ranging from the ability to recognize forms or count fingers up to 20/100 or better. Such cases with no fundus lesion observable show a practically normal form field and good fields for color, showing that

only central vision is affected. Such persons lack binocular single vision, but if the fellow eye has fairly good vision and no great refractive error they are seldom annoyed by asthenopia and if otherwise physically fit should certainly be accepted for special or limited military service if not for general service. Many of them are engaged in occupations requiring good sight. We should profit by the English and French standards so far as this class of cases is concerned. His general conclusion is that our visual requirements should be made more elastic, at least in certain branches, in this national crisis.

COUNCIL OF NATIONAL DEFENSE—MEDICAL SECTION

The Central Governing Board of the Volunteer Medical Service Corps of the Council of National Defense announces that the Iowa State Executive Committee of the Volunteer Medical Service Corps is comprised of the following doctors: Bert L. Eiker, M.D., Leon; David S. Fairchild, M.D., Clinton; John C. Rockafellow, M.D., Chairman, Equitable bldg., Des Moines; G. A. Huntoon, M.D., Des Moines; John N. Warren, M.D., Sioux City; W. L. Bierring, M.D., Secretary, Equitable bldg., Des Moines; A. A. Anderson, M.D., Des Moines; Geo. Royal, M.D., Des Moines.

The purpose of this committee is to cooperate with the Central Governing Board in prosecuting all activities pertaining to the mobilization and enrollment of members of the Volunteer Medical Service Corps throughout the state.

The Central Governing Board of the Volunteer Medical Service Corps also authorizes the appointment of one county representative in each county in every state of the Union. The county representatives for Iowa are as follows:

Adair—Dr. J. A. Harper, Greenfield.
 Adams—Dr. Chas. A. Bryant, Corning.
 Allamakee—Dr. D. H. Bowen, Waukon.
 Appanoose—Dr. Geo. F. Severs, Centerville.
 Audubon—Dr. A. L. Brooks, Audubon.
 Benton—Dr. J. E. Luckey, Vinton.
 Blackhawk—Dr. T. U. McManus, Waterloo; Dr. W. B. Small, Waterloo.
 Boone—Dr. E. M. Myers, Boone.
 Bremer—Dr. W. A. Rohlf, Waverly.
 Buchanan—Dr. W. P. Crumbacker, Independence.
 Buena Vista—Dr. Jos. Delahunt, Marathon.
 Butler—Dr. Thos. A. Hobson, Parkersburg.
 Calhoun—Dr. D. J. Townsend, Lohrville.
 Carroll—Dr. L. G. Patty, Carroll.
 Cass—Dr. C. L. Campbell, Atlantic.
 Cedar—Dr. R. A. Peters, Tipton.
 Cerro Gordo—Dr. C. P. Smith, Mason City.
 Cherokee—Dr. Edward Hornibrook, Cherokee.
 Chickasaw—Dr. Paul E. Gardner, New Hampton.
 Clark—Dr. G. I. Armitage, Murray.
 Clay—Dr. Jos. C. Colleston, Spencer.
 Clayton—Dr. Wm. J. McGrath, Elkader.

- Clinton—Dr. D. S. Fairchild, Clinton.
 Crawford—Dr. Wm. T. Wright, Dennison.
 Dallas—Dr. M. N. Voldeng, Woodward.
 Davis—Dr. Edw. D. Beauchamp, Bloomfield.
 Decatur—Dr. B. L. Eiker, Leon.
 Delaware—Dr. H. A. Dittmer, Manchester.
 Des Moines—Dr. C. H. Magee, Burlington.
 Dickinson—Dr. Q. C. Fuller, Milford.
 Dubuque—Dr. J. R. Guthrie, Dubuque; Dr. I. S. Bigelow, Dubuque.
 Emmet—Dr. Albert Anderson, Estherville.
 Fayette—Dr. Geo. D. Darnell, West Union.
 Floyd—Dr. C. J. O'Keefe, Marble Rock.
 Franklin—Dr. A. J. Hobson, Hampton.
 Fremont—Dr. Theo. C. Harris, Tabor.
 Greene—Dr. W. M. Young, Jefferson.
 Grundy—Dr. E. A. Crouse, Grundy Center.
 Guthrie—Dr. Edw. L. Bower, Guthrie Center.
 Hamilton—Dr. S. L. Clabaugh, Kamrar.
 Hancock—Dr. A. J. Cole, Britt.
 Hardin—Dr. J. A. W. Burgess, Iowa Falls.
 Harrison—Dr. J. L. Tamisiea, Missouri Valley.
 Henry—Dr. F. C. Mehler, New London.
 Howard—Dr. Geo. Kessel, Cresco.
 Humboldt—Dr. Henry Co. Doan, Humboldt.
 Ida—Dr. G. C. Moorehead, Ida Grove.
 Iowa—Dr. Arnold C. Moon, Williamsburg.
 Jackson, Dr. D. N. Loose, Maquoketa.
 Jasper—Dr. Leslie M. Smead, Newton.
 Jefferson—Dr. S. K. Davis, Libertyville.
 Johnson—Dr. L. W. Harding, Iowa City.
 Jones—Dr. A. G. Hejinian, Anamosa.
 Keokuk—Dr. A. P. Johnson, Sigourney.
 Kossuth—Dr. M. J. Kenefick, Algona.
 Lee—Dr. C. R. Armentrout, Keokuk.
 Linn—Dr. G. E. Crawford, Cedar Rapids; Dr. Jno. M. Ristine, Cedar Rapids.
 Louisa—Dr. John H. Chittum, Wapello.
 Lucas—Dr. T. M. Throckmorton, Chariton.
 Lyon—Dr. J. E. Smith, Little Rock.
 Madison—Dr. W. H. Thompson, Winterset.
 Mahaska—Dr. Lewis A. Rodgers, Oskaloosa.
 Marion—Dr. C. M. Harrington, Knoxville.
 Marshall—Dr. Geo. M. Johnson, Marshalltown.
 Mills—Dr. Geo. Mogridge, Glenwood.
 Mitchell—Dr. Chas. C. Wiggins, Osage.
 Monona—Dr. Geo. S. Waterhouse, Mapleton.
 Monroe—Dr. H. C. Eschbach, Albia.
 Montgomery—Dr. Lewis A. Thomas, Red Oak.
 Muscatine—Dr. F. H. Little, Muscatine.
 O'Brien—Dr. F. W. Cram, Sheldon.
 Osceola—Dr. Wm. E. Ely, Ocheyedan.
 Page—Dr. T. E. Powers, Clarinda.
 Palo Alto—Dr. Henry A. Powers, Emmetsburg.
 Plymouth—Dr. Wm. H. Heller, Remsen.
 Pocahontas—Dr. W. W. Beam, Rolfe.
 Polk—Dr. Lewis Schooler, Des Moines; Dr. J. T. Priestley, Des Moines; Dr. C. E. Halloway, Des Moines.
 Pottawattamie—Dr. V. L. Treynor, Council Bluffs;
 Dr. A. P. Hanchett, Council Bluffs.
 Poweshiek—Dr. Chas. D. Busby, Brooklyn.
 Ringgold—Dr. Claude M. Walker, Kellerton.
 Sac—Dr. Wm. J. K. Findley, Sac City.
 Scott—Dr. W. L. Allen, Davenport; Dr. G. E. Decker, Davenport.
 Shelby—Dr. E. M. Moon, Harlan.
 Sioux—Dr. Albt. DeBey, Orange City.
 Story—Dr. Frank H. Conner, Nevada.
 Tama—Dr. Frank T. Launder, Garwin.
 Taylor—Dr. Jos. W. Beauchamp, Bedford.
 Union—Dr. Frank E. Sampson, Creston.
 Van Buren—Dr. Chas. R. Russell, Keosauqua.
 Wapello—Dr. Smith A. Spilman, Ottumwa.
 Warren—Dr. O. P. Juskins, Indianola.
 Washington—Dr. C. A. Boice, Washington.
 Wayne—Dr. J. N. McCoy, Corydon.
 Webster—Dr. C. J. Saunders, Fort Dodge.
 Winnebago—Dr. H. R. Irish, Forest City.
 Winneshiek—Dr. F. A. Henessey, Calmar.
 Woodbury—Dr. J. N. Warren, Sioux City; Dr. R. E. Conniff, Sioux City.
 Worth—Dr. Chas. A. Hurd, Northwood.
 Wright—Dr. J. H. Sams, Clarion.

The Council of National Defense authorizes the following:

Many thousands of blanks for enrollment of the legally qualified men and women physicians of the country in the reorganized Volunteer Medical Service Corps are being mailed by the Chairman of the General Medical Board of the Council of National Defense. With the blank are enclosed a letter and a folder giving all details as to the organization.

The blank which applicants are asked to fill out reads:

Application for Membership in the Volunteer Medical Service Corps Authorized by Council of National Defense Approved by the President of the United States

(Spaces for date, full name, street, city and state addresses.)

1. Date of birth.
2. Place of birth.
3. If foreign born, when did you become a resident of the United States?
4. When and where naturalized? How?
5. Are you single, married, widowed, or divorced? Nationality? Color? Height? Weight?
6. State high school, academy, college, or university you have attended, with dates of attendance, graduation, and degrees received.
7. Give all literary or scientific degrees you have received and names of institutions granting them, with dates.
8. With what languages or branches of science are you familiar?
9. When and where graduated in medicine?
10. When and where licensed to practice medicine?
11. Name principal medical societies of which you are a member. (Do not abbreviate.)
12. What specialty of medicine do you practice?

13. Proportion of time devoted to specialty?
14. Clinical experience in specialty? Institution? No. of years?
15. State all past hospital services. Hospital. Capacity. Date.
16. Present hospital connections. Hospital. Department. Capacity.
17. School and teaching positions occupied in the past. School. Capacity. Date.
18. School and teaching positions now occupied. School. Department. Capacity.
19. State all past experience in industrial or railroad medicine and surgery. **Name and address of plant.** **Type of service** (whether medical, surgical, occupational diseases, accident work, contract practice for families of workmen, etc.) **Duration of service.**
20. State all present connections with industries or railroads. **Name and address of plant.** **Type of service** (whether medical, surgical, occupational diseases, accident work, contract practice for families of workmen, etc.) **Time devoted to each plant.**
21. State military, naval or public health experience you have had.
22. Are you a Federal, State, County, or Municipal Officer? (State exact designation of your office.)
23. Are you engaged in enterprises other than medicine? If so, what?
24. Have you followed any occupation, medical or otherwise, not already noted?
25. Have you previously been an applicant for entry into the United States Service? Service. When. Where. Result. (If rejected, state why.)
26. I have not applied for appointment in the Medical Reserve Corps of the Army, the Naval Reserve Force or the Public Health Service owing to—(Check reason.)
 - a. Physical disability. (State disability in detail.)
 - b. Over age (55). (State age in years.)
 - c. Essential institutional need. Name of institution. Position. Name and address of chief executive.
 - d. Essential community need. Approximate population. Number of physicians now practicing in your community.
 - e. Essential to Health Department. Name of department. Position. Name and address of chief of department.
 - f. Essential to industries. Name of plant. Position. Name and address of chief executive.
 - g. Essential to medical school. Name of medical school. Position. Name and address of dean.
 - h. Essential to Local or Medical Advisory Boards. Name and address of Board. Position.
 - i. Dependents. Number of dependents including self but not employees. What proportion of your income or that of your dependents is derived from sources other than the practice of your profession? Do other persons contribute to the support of your dependents? Have you or your dependents other immediate relatives who could provide support for your dependents?

- j. Sex. (State your sex.)
- k. Religious conviction, not a citizen, or other reasons. (State reason.)
27. Are you available for any of the following services:
 - a. Consultant. Medical Service. Surgical Service. Public Health Service. Special Service—What?
 - b. Institutional. Laboratory. Administrative. Medical Service. Surgical Service. Special Service—What?
 - c. Medical service for industries. Part time. Full time. Own community. Other communities. Kind of work.
 - d. Local or Medical Advisory Boards.
 - e. Reclamation of registrants rejected for physical unfitness.
 - f. Services to needy families and dependents of enlisted men.
 - g. Sanitation.
 - h. Miscellaneous service.
28. Check the Governmental service in which you would prefer to serve, if selected.
 - a. Medical Reserve Corps of the Army.
 - b. Naval Reserve Force.
 - c. Public Health Service.

Note—Wherever practicable, your preference will be given consideration. However, the exigencies of war may render it necessary to ask you to do service other than that indicated as your choice.

29. Personal references. (Name three, at least one physician.) I hereby make application for membership in the Volunteer Medical Service Corps of the United States. I certify that, to the best of my knowledge and belief, the answers to the preceding questions are true and correct in every respect. I pledge myself to abide by the rules and regulations of the Corps; to apply for a commission in the Medical Reserve Corps of the Army, the Naval Reserve Force, or for appointment in the Public Health Service when called upon to do so by the Central Governing Board; and to comply with any request for service made by the Central Governing Board.

(Signature)
(Present post office address).....

An outline of the purpose and scope of the Volunteer Medical Service Corps, contained in the folder, is as follows:

Volunteer Medical Service Corps Organization:

1. Provides means for obtaining quickly men and women for any service required.
2. Furnishes recommendations and necessary credentials to assure the best of medical service both military and civil.
3. Determines beyond question the attitude of the individual toward the war.

Object of Corps

1. Placing on record all medical men and women in the United States.

2. Aiding Army, Navy, and Public Health Service in supplying war medical needs.
3. Providing the best civilian medical service possible.
4. Giving recognition to all who record themselves in Army, Navy, Public Health activities, or civilian service.

Working Plans

All matters pertaining to the organization will be under the direction of a Central Governing Board, authorized by the Council of National Defense and approved by the President of the United States, and its affairs will be conducted from the general headquarters of the Volunteer Medical Service Corps at Washington, D. C., under the Council of National Defense.

Operating System

1. Central Governing Board of 25.
2. Forty-nine state executive committees.
3. One representative in each county in every state.

(Note)—(a) All men to be appointed to state and county committees preferably over 55.

(b) Each state executive committee to consist of five in the smaller states and one additional member in each of the larger states in proportion to each 1,000 medical inhabitants (to be nominated by state committees, Medical Section, Council of National Defense, from among their own members).

(c) Each county of 50,000 population or under should have one representative. All counties having over 50,000 population should have one additional county representative for each 50,000 population or fraction thereof. All county representatives to be nominated by the state executive committee.

Duties

Central Governing Board—To receive and pass upon all appointments.

State Governing Boards—To receive facts from county representatives and make recommendations to Central Governing Board.

County Representatives—To submit facts to state committees according to advice from Central Governing Board or State Executive Committees.

Under the reorganization, every legally qualified physician, man or woman, holding the degree of Doctor of Medicine from a legally chartered medical school, who is not now attached to the government service, and without reference to age or physical disability, may apply for membership and be admitted if qualified; whereas, the original organization admitted only those who for various reasons were ineligible to membership in the Medical Reserve Corps. The organization will mobilize the medical profession in order to provide for the health needs of the military forces and the civil population, and the recording and classifying of doctors will afford means of obtaining quickly men and women for any service required.

To date about 40,000 of the 144,116 doctors in the United States—not including the more than 5,000

women doctors—either are in government service or have volunteered their services. Up to July 12 the Surgeon General had recommended to the Adjutant General 26,733 doctors for commissions in the Medical Reserve Corps. About 9,000 others who applied were rejected. With the 1,194 in the Medical Corps of the National Guard and 1,600 in the Navy, the total—38,527—constitutes 26.73 per cent. of the civilian doctors. Deducting those who declined their commissions or who have been discharged because of subsequent physical disability or other cause, the number actually commissioned in the Medical Reserve Corps stands (August 23) at 23,531 with several hundred recommended whose commissions are pending. Of the 23,531 there are 22,232 now on active duty.

The need of using wisely the service of the medical men, in view of the universal war activities, is indicated when it is known that in the five weeks ended August 2, there were 2,700 medical officers commissioned in the Army, Navy, and Public Health Service—or at the rate of 540 per week. This rate at which enrollment is proceeding is the cumulative result of the operation of all the machinery which has been in process of setting up since the United States entered the world war. While the number commissioned in the five weeks mentioned may seem large, it is not much greater than the rate at which medical men have been receiving their commissions during the past year. There are now 28,674 medical officers commissioned in the three services—26,027 in the Army, 2,427 in the Navy, and 220 with the commission of Assistant Surgeon in the United States Public Health Service. Of the 2,700 commissioned in the five weeks ended August 2, there were 2,527 in the Army, 169 in the Navy, and 4 in the United States Public Health Service. Also, forty doctors designated as Acting Assistant Surgeons have been taken on in the Public Health Service in the last two months, twenty-one for work in extra-cantonment zones, fourteen for special venereal disease work, and five for marine hospitals. The 26,027 in the Army medical service comprise 933 in the Medical Corps, the regular Army service; 23,531 in the Medical Reserve Corps; 1,194 in the Medical Corps of the National Guard, and 369 in the Medical Corps of the National Army.

It is estimated that at least 50,000 doctors will be necessary eventually for the Army. It can readily be seen that with the enrollment of these active men, their places in communities and institutions must be cared for and the work, therefore, throughout the country must be so systematized and coordinated that the civilian population may not suffer. An important aspect is the need for medical men in the communities where munitions and other vital war products are being made.

The Volunteer Medical Service Corps, supervised by the Central Governing Board now named, will thoroughly care for these needs.

In connection with the mailing of membership blanks for the Volunteer Medical Service Corps to

all legally qualified men and women doctors of the country, Dr. Franklin Martin, Chairman of the General Medical Board of the Council of National Defense, says:

"Great as has been the response to the appeal for doctors, it must be greater. It is imperative that every doctor not already in a government service fill out, sign and return the blank to the officers of the Central Governing Board, Council of National Defense, Washington, at once. We believe thousands will do this, as they are anxious to be enrolled as volunteers for the Medical Departments of the Army and Navy before registration under the new draft law goes into effect. The appeal for enrollment in the Volunteer Medical Service Corps, which President Wilson has formally approved, is an official governmental call to service. This will place the members of the medical profession of the United States on record as volunteers, available for classification and ready for service when the call comes."

REDUCING SHELL SHOCK

Frequent cheerful letters from home help to make American soldiers less subject to shell shock, according to W. Frank Persons, director General of the Department of Civilian Relief, American Red Cross, who has been spending four weeks with the American Expeditionary Forces in France.

"Any worry about the condition of his dependents or relatives tends to put a soldier into a condition where he is subject to shell shock," said Mr. Persons. "I have this on the authority of eminent specialists who are dealing with such cases in the military hospitals. A soldier who is untouched by bullet or shell may, from shell shock, return to his trench in such nervous condition as to require hospital treatment and a long rest. The best insurance against this serious by-product of modern warfare, the physicians say, is for the man to go over the top or meet a charge in a buoyant, untroubled frame of mind in which his sole concern is the serious business at hand. Cheerful letters from home help to produce the proper mental attitude but confidence that the home folks lack for nothing is an essential foundation.

"That our men may be protected as far as possible from worry about their families, and that nothing else that will maintain morale be left undone, it is obvious that the American people must see to it that no family of a soldier lacks for anything that will enable it to write honestly cheerful letters abroad.

"To the American Red Cross has been given leadership in this vital undertaking. With utmost sympathy its 40,000 workers, organized as the Home Service Sections of 5,000 Red Cross chapters, have come already into friendly touch with 300,000 families of soldiers. Whatever the need, this need has been met at once either directly by the Home Service Section, or in cooperation with local agencies."

MOBILIZATION OF WOMEN PHYSICIANS FOR ANESTHETIC SERVICE

Every effort is being made to keep war surgery at top-notch efficiency and to provide every wounded American dough-boy with safe, rapid and comfortable anesthesia at the front and in the hospitals in Blighty.

The following telegram is self-explanatory:

Washington, D. C., Sept. 18.

Dr. F. H. McMechan,
Avon Lake, Ohio.

Proceed at once to round-up qualified women physician anesthetists under forty-five years of age, of mental poise, as well as young women graduates, who are competent for such service.

Dr. Franklin Martin, (per) Dr. Emma Wheat Gillmore, Chairman: Women Physicians' Committee, Council of National Defense—Medical Section.

These women physicians who are qualified for anesthetic service or who are competent to be intensively trained are requested, at once, to get in touch with—

Dr. F. H. McMechan, Sec'y, Interstate and American Associations of Anesthetists, Avon Lake, Ohio.

UROLOGY OF WAR

E. L. Keyes, Jr., (New York), France (Journal A. M. A., Aug. 3, 1918), in his chairman's address before the Section on Genito-Urinary diseases at the late meeting of the American Medical Association, after speaking on the glorious record made by American physicians in the present war, even before our actual taking part in it, says that the situation found in France by American urologists was unexpected. In the armies of our Allies there is practically no urologic surgery as such. Among the English the urologic surgeons have all become general surgeons, and this history repeats itself among the French. In both countries those men whose qualifications were chiefly in the treatment of venereal diseases have ceased being surgeons altogether and are working in hospitals for the treatment of venereal and skin diseases. The reason for the situation is to be found in the material that presents itself to the surgeon's hand. At the front and even at the evacuation hospitals or clearing stations there is no genito-urinary surgery at all. Penetrating wounds of the abdomen which involve the kidney or the ureter usually inflict wounds of far greater importance on such adjacent organs as the lung, the gastro-intestinal tract, the liver or the spleen. Extraperitoneal wounds are only part of an injury which may be a compound fracture of the thigh or of the pelvis, that not infrequently involves the rectum as well. Even the genitals are scarcely ever wounded without grave injury about the thigh or pelvis. The author gives statistics showing the relative rarity of the wounds of the urinary organs. But in the vast number wounded in the war,

there have been sufficient to give valuable experience in this specialty. While his experience has been mainly hearsay, in this regard, he gives details of the conclusions derived as to the management of the various war injuries of the genito-urinary type. Keyēs says that it is only within the past six months that surgeons have learned to employ the primary suture of wounds, and the extraordinary results obtained from this will certainly react on the department of urology. In future many kidneys will doubtless be saved by immediate resection and many lives saved by the immediate suture of the bladder in cases which up to the present time have been subjected to the dangers of prolonged drainage and the resulting infection. During the war, however, the specialty of surgery of the genito-urinary organs will doubtless continue as a province of general surgery. The expert knowledge of the specialist will be chiefly useful at base hospitals, but the urologist will be the chief gainer by his broadened knowledge and surgical capacity.

CIRCULAR LETTER TO PHYSICIANS

- It is important for the protection of the health of the troops in camps that every community, no matter how small, report the presence of all communicable diseases, especially if present in epidemic proportions. Selected and enlisted men in traveling may be exposed to such diseases and carry them into camp.
- It is obvious that disease reporting depends primarily upon the doctors. In this great war thousands of doctors have joined the colors. Surely those who have not could serve their country in this respect by reporting at once all cases of communicable diseases occurring in their practice to the proper health authorities. Where the emergency seems to warrant such action the reports should be made by telephone or telegraph.
- In cases of communicable diseases where a selected or enlisted man has been so exposed as to be a serious menace to the camp or post to which he is about to go, it is especially desirable that the attending physician take immediate action to prevent such menace.
- For this purpose the following plan of action is suggested by the United States Public Health Service after a conference with Army sanitary authorities:
1. The physician should make an immediate report to the local health authorities who should notify (by telephone or telegraph if necessary) the Senior Medical Officer of the camp or post to which the selected man or soldier may become a menace. A duplicate notification should be made by the local authorities to the state health authorities.
 2. If there be no local health authority having jurisdiction, the physician should notify (by telephone or telegraph if necessary) the state health officer who should notify (by telephone or telegraph if necessary) the Senior Medical Officer of the camp or

- post to which the selected man or soldier is about to go.
3. The notification should be explicit, giving name of selected man or soldier and other identification data together with his address and the nature of the disease.
 4. The notification of the Senior Medical Officer of the camp or post by the local or state health authorities should be in addition to the present procedure in such cases.

RUPER F. BLUE,
Surgeon General.

FROM THE IOWA STATE BOARD OF HEALTH

Could the Kaiser do More or Worse?—The people of our beloved state cannot realize the very serious condition that is this moment confronting our nation and the future of our children. The manhood and womanhood of America are in the scales and are now being weighed.

If the Kaiser could send an army of German prostitutes into our camps to infect United States soldiers with gonorrhea and syphilis and thus keep them from the front, he would do it at once.

American prostitutes have (directly or indirectly) infected with syphilis 444,775 registered men not called in the first draft. In other words, American prostitutes have infected with syphilis about a half million men in what is virtually our reserve army. Let us examine the following table and ask the question: How many in Iowa have been thus infected? This may not appear to be a very serious question, but it is doing more to undermine and destroy our army than the Kaiser's bullets. The question also arises: What kind of children are to be brought into the world from such diseased parents?

The Answer

Alabama	8,444	Indiana	11,912
Arizona	1,694	Iowa	10,159
Arkansas	6,941	Kansas	7,195
California	13,796	Kentucky	8,819
Colorado	3,968	Louisiana	7,294
Connecticut	7,453	Maine	2,938
Delaware	1,046	Maryland	5,725
Dist. of Col.....	1,572	Massachusetts	17,111
Florida	3,845	Michigan	17,201
Georgia	10,710	Minnesota	10,246
Idaho	1,965	Mississippi	6,426
Illinois	29,669	Missouri	13,939
Montana.....	4,021		

In each state there are at least five times as many registered men who have gonorrhea.

The above figures are based on the report of the Provost Marshal General on the first draft, p. 75. The estimate of the prevalence of syphilis is based on Pusey's statement, "It is certainly a conservative estimate * * * to place the percentage of syphilis among the adult male population of the United

States at more than 5 per cent." (Exactly 5 per cent. is used here.) See "Syphilis, a Modern Problem," Wm. A. Pusey, M.D., p. 106.

DR. GUILFORD H. SUMNER,
Secretary.

IOWA MEDICAL MEN IN THE WAR

To Camp Bowie, Texas, base hospital, Lieut. C. E. Magoun, Sioux City.

To Camp Custer, Mich., Lieut. J. W. Fonda, Council Bluffs.

To Camp Grant, Ill., Capt. C. R. Armentrout, Keokuk; Lieut. F. R. Menagh, Denison.

To Camp Pike, Ark., base hospital, Lieut. G. D. Schoonmaker, Philadelphia.

To Camp Shelby, Miss., base hospital, Capt. C. A. Katherman, Sioux City.

To Fort Oglethorpe for instruction, Capt. C. W. Mehlop, Dubuque.

To Fort Worth, Texas, Carruthers Field, as flight surgeon, from Mineola, Capt. O. J. Blessin, Postville.

To Hoboken, N. J., Lieut. G. Gould, Iowa City.

The following order has been revoked: To Camp McClellan, Ala., from Eastern Department, Capt. S. A. O'Brien, Mason City.

To Camp Bowie, Fort Worth, Texas, base hospital, Lieut. W. C. Hand, Hartley.

To Camp Custer, Battle Creek, Mich., base hospital, Capt. M. B. Galloway, Webster City; Lieut. A. L. Darcke, Des Moines. For duty, Lieut. D. B. Sollis, Bedford.

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. M. A. Healy, Boone; Lieuts. J. G. Clapsaddle, Burt; M. C. Brush, Shenandoah.

To Camp Grant, Rockford, Ill., base hospital, Capt. A. D. McKinley, Des Moines.

To Camp Jackson, Columbia, S. C., base hospital, Capt. G. F. Harkness, Davenport; from Tuscaloosa, Lieut. C. H. Steele, Belmond.

To Camp Meade, Admiral, Md., for duty, Lieut. W. J. Leaman, Leaman Place.

To Fort Oglethorpe for instruction, Lieut. W. J. Fenton, Mystic; W. J. Foster, Wellman.

To Fort Riley for instruction, Capt. T. Lucast, Forest City; Lieuts. C. L. Baskin, Chariton; D. O. King, Eldora; W. E. Lyon, Garden Grove; R. Houston, Nevada; C. H. Bartruff, Reinbeck; Judson W. Myers, Sheldon; A. A. Hoffmann, Waterloo.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Capt. R. Huizenga, Rock Valley; Lieut. R. C. Herrick, Gilmore City.

To Fort Sill, Okla., base hospital, from Camp Bowie, Capt. W. H. Hombach, Remsen.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. E. T. Jaynes, Waterloo.

To Camp Beauregard, La., base hospital, from Camp Bowie, Lieut. H. H. Dilley, Des Moines; from Camp Travis, Lieut. R. M. Cullison, Montezuma.

To Camp Cody, N. M., base hospital, Lieut. M. Ochs, Eldredge.

To Camp Bowie, Texas, base hospital, Lieut. B. S. Barnes, Shenandoah.

To Camp Custer, Mich., base hospital, from Camp Pike, Lieut. F. A. Priessman, Mechanicsville.

To Camp Dix, N. J., from Fort Riley, Lieut. W. Diven, Iowa City.

To Camp Dodge, Iowa, Lieuts. L. K. Meredith, Des Moines; O. F. Parish, Grinnell; L. W. Pence, State Center; base hospital, Capt. G. T. McCauliff, Webster City.

To Camp Joseph E. Johnson, Fla., from Fort Oglethorpe, Capt. J. M. Garrett, Fort Dodge.

To Camp Pike, Ark., base hospital, Capt. J. H. Whiteley, Bonaparte; Lieuts. C. H. Herrmann, Amiana; J. R. Winett, Eldora.

To Camp Sherman, Ohio, base hospital, Capt. F. C. Sage, Waterloo.

To Fort Des Moines, Iowa, Capt. H. B. Gratiot, Dubuque.

To Fort Oglethorpe for instruction, Capt. C. B. Burke, Algona; T. S. Lacey, Glenwood; Lieuts. L. K. Meredith, Des Moines; J. J. Beatty, Farragut.

To Fort Riley, Capt. J. D. Geissinger, Spirit Lake; J. E. Hoyt, Corning; Lieuts. G. R. Gould, Conrad.

To Minneapolis, Minn., Dunwoody Institute, from Camp Zachary Taylor, Lieut. J. S. Cooper, Burlington.

To Washington, D. C., Surgeon-General's Office, from Camp Jackson, Lieut. G. H. Steele, Belmond.

To Wichita Falls, Texas, as instructor, Lieut. C. Kail, Stratford.

To Arcadia, Calif., as post surgeon, from Camp Dix, Major D. H. Cogswell, Cedar Rapids.

To Camp Dodge, Iowa, Capt. J. W. Woodbridge, Cylinder; F. R. Spards, Waverly; Lieuts. J. T. McConnaughey, Winfield; L. W. Pence, State Center. Base hospital, Capt. J. D. Geissinger, Spirit Lake.

To Camp McClellan, Ala., from Eastern Department, Capt. S. A. O'Brien, Mason City.

To Fort Oglethorpe for instruction, Lieuts. L. K. Meredith, Des Moines; C. O. Yenerich, Rockford; from duty as an enlisted man, Lieut. E. C. Ambrose, Cranby.

To Fort Riley for instruction, Lieuts. W. G. Waker, Corydon, W. W. Daut, Muscatine.

To Mineola, New York, from the Surgeon General's office, Lieut.-Col. E. R. Lewis, Dubuque.

To Washington, D. C., from Camp Upton, Capt. H. G. Vaughan, Oak Park.

Honorable discharge on account of physical disability existing prior to entrance into the service, Capt. A. C. Hansen, Chester.

To Camp A. A. Humphreys, Va., Lieut. B. L. Trey, Parkersburg.

To Camp Jackson, S. C., evacuation hospital, from Fort Oglethorpe, Lieut. W. J. Foster, Wellman.

To Camp Travis, Texas, from Southern Department, Lieut. R. V. Henry, Hedrick.

To Fort Oglethorpe for instruction, Lieut. M. J. McVay, Lake City.

To Fort Riley, as tuberculosis examiner, from New Haven, Capt. J. T. Padgham, Grinnell.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to his proper station, from Camp Dodge, Capt. C. S. James, Centerville, from Camp Grant, Capt. I. E. Nervig, Sioux City; from Camp Zachary Taylor, Lieut. A. E. Acher, Fort Dodge.

To Rockefeller Institute for instruction, from New Haven, Lieut. M. T. Morton, Iowa City.

To West Point, Ky., Lieut. G. Gould, Iowa City.

To report to the commanding general, Philippine Department, from Camp MacArthur, Lieuts. G. Braunlich, Davenport; A. D. Smith, Mason City.

Supplement to list of Iowa physicians who have been recommended by the Surgeon General for commissions in the Medical Officers' Reserve Corps.

Lester E. Hooper, 1st. Lieut., Beech.
 Simon Andrew Huber, Capt., Charter Oak.
 George Richard Gould, 1st. Lieut., Conrad.
 Will George Walker, 1st. Lieut., Corydon.
 Simon Emanuel Lincoln, Capt., Des Moines.
 Herbert Dayton Mereness, Capt., Dolliver.
 Albert Herman Blocklinger, Capt., Dubuque.
 Orestes Augustine Brownson, 1st. Lieut., Dubuque.
 Lewis Joseph Linehan, 1st. Lieut., Dubuque.
 Matthias Joseph Moes, Capt., Dubuque.
 Claude Bernard Rogers, Capt., Earlville.
 Horace Porter Mahan, 1st. Lieut., Ellsworth.
 Louis Philip Rich, Capt., Fredericksburg.
 Clark Hays Lauder, 1st. Lieut., Grinnell.
 Eugene Finch Talbott, Capt., Grinnell.
 Walter Klingeman Long, Capt., Hampton.
 Arthur Calvin Rhine, Capt., Hampton.
 Harry Ernest Middletown, 1st. Lieut., Lake City.
 William Andrew Henneger, 1st. Lieut., La Motte.
 John Elmer Baker, 1st. Lieut., Maynard.
 William Ellsworth Cody, 1st. Lieut., Merrill.
 Walter William Daut, 1st. Lieut., Muscatine.
 John Gaston Ryan, Capt., New Sharon.
 Howard Risk, 1st. Lieut., Oelwein.
 George Hans Boetel, 1st. Lieut., Rock Rapids.
 Frank Paul Winkler, 1st. Lieut., Sibley.
 Harry Herbert Hagedorn, 1st. Lieut., Sioux City.
 Marshal Edwin Dingman, 1st. Lieut., Urbana.
 John DeWalt Geissinger, Capt., Spirit Lake.
 George Leslie Atkins, Capt., Superior.
 Hervey Fulton Masson, 1st. Lieut., Washington.
 Enos DeWitt Miller, 1st. Lieut., Wellman.

LIVES THROUGH FOUR WARS

Dr. R. H. Sheffield, of Eldora, now nearing the ninety-fifth milestone on life's journey, bids fair to have lived through four wars in which the United States has been engaged. The Doctor saw service as a surgeon in the American Army in the Mexican War, was a loyal resident of the State of New York during the War of the Rebellion, was an Iowa resident during the Spanish-American War and now has three grandsons serving Uncle Sam in the world struggle for Democracy. The Doctor was born in

Kentucky of an English father and a Southern mother. The mother died when her son was young and the father took the boy to New York state. Later the youngster was returned to Kentucky to live with his mother's people. Like other people in Kentucky young Sheffield's relatives owned slaves, and like all the slave states Kentucky took a keen interest in the Mexican War. Mr. Sheffield was studying medicine at the breaking out of the Mexican War and accompanied the Kentucky troops as assistant surgeon. In the same command were Mississippi troops, among whom was one Jefferson Davis. The two young men slept a short distance apart in the camp of the Southerners. Later Davis went South to join General Scott and Sheffield was transferred to a hospital.

After the war Dr. Sheffield went back to New York and later came to Iowa, settling near the town of Gifford, in this county, where he bought large tracts of land and where he practiced his profession for many years. Advancing age and deafness forced Dr. Sheffield to retire from practice and a number of years ago he moved to Eldora. Notwithstanding his somewhat enfeebled physical condition, his mind is alert and he is a virtual cyclopedia of information not alone of the present war but also that of the Mexican and Civil Wars. The Doctor during his long and eventful life has been a student and old age finds his mind a storehouse of useful information along all lines of endeavor.

Then they began to come—some were badly wounded—mostly not. Not a grouch among that bunch. They all said: "We gave them hell!" I believe them.

It is wonderful to see those boys. They are men, every bit of them, and I repeat that they are worthy of all the comfort anybody can give them. They will never get as much as they deserve.

Think of it. A bunch of Iowa boys were right in the thick of it. Brewer's and Conkling's men. Some are here at the hospital now. They said the Iowans were in the Huns' second trenches when they left them. Not so bad for Iowa. Tell the Des Moines slackers for me that there are a few real men from Des Moines fighting for liberty. Perhaps they have forgotten.

At the head of the pathological laboratory in the largest American base hospital in France is a Des Moines man, Dr. Daniel J. Glomset, with Mercy Hospital until he departed for overseas duty in June.

At this hospital, just back of the Aisne-Marne front line in the great allied offensive in July, Dr. Glomset heard the reports of the victory over the Huns and the glorious part that Iowa boys were playing. His letters to Mrs. Glomset, now carrying on his work as pathologist at Mercy Hospital, are a vivid description of a great war hospital, of the wounded boys as they are borne back from the field of honor, and of the peaceful land and homely people

that the German war machine has attempted to conquer.

Both Dr. and Mrs. Glomset were in Germany at the outbreak of the war, carrying on research work in the University of Prague.

DOCTOR IN STYLISH GARB

Dr. Guy Cliff, assistant city physician, appeared for duty yesterday in a regulation army uniform with two silver bars on each shoulder of his blouse.

Dr. Cliff is a Captain in the National Guard, but has been on sick leave for some time. He is looking after the health of the detachment at the fair grounds.

Dr. R. B. H. Gradwohl, director of the Gradwohl Biological Laboratories and the St. Louis Pasteur Institute of St. Louis, Mo., has recently been honored with the position of organizing director of naval base hospital, Unit No. 19, with the rank of lieutenant commander. Realizing fully the fact that these laboratories are fulfilling a great national duty in caring for the wants of physicians, Dr. Gradwohl will leave his splendid organization in full working order under competent direction during his absence. The physicians who have honored these institutions with their work may continue to send to them with full assurance that their every want will be carefully and conscientiously looked after.

BOOK REVIEWS

A POCKET FORMULARY

By E. Quin Thornton, M.D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia. Eleventh Edition Revised, Lea & Febiger, 1917. Philadelphia and New York. Price \$2.00.

This book will be found convenient to the general practitioner in preparing desirable and palatable formulae for patients suffering from common diseases which should not be disregarded, or treated by proprietary medicines, both apothecaries weights and measures and the metric system are used. Various diseases are named and the appropriate treatment given. Many physicians dispense their own medicines, others write prescriptions, in either case formulae can be selected and preparations made which will be more accurate and scientific than prescribing certain proprietary medicine, however attractive they may appear. The author disclaims any intention to make medicine easy or to relieve the practitioner of using his own judgment in prescribing for his patient, only to help him.

CLINICAL DIAGNOSIS

A Manual of Laboratory Methods. By James Campbell Todd, M.D., Professor of Pathology, University of Colorado. Fourth

Edition, Revised and Reset. 12Mo of 687 Pages With 232 Text Illustrations and 12 Colored Plates. Philadelphia and London. W. B. Saunders Company, 1918. Cloth \$3.00 Net.

This work has, from its first appearance, been a well written, excellently illustrated, concise and accurate manual dealing with those laboratory methods which the practitioner of medicine is most likely to employ as an aid to diagnosis. It is, of course, not intended for "tissue" diagnosis and bacteriological diagnosis is considered but briefly. The illustrations are very good. It can be recommended to those physicians who do not desire a work as voluminous as are several on the market.

Henry Albert.

SYPHILIS AND PUBLIC HEALTH

By Edward B. Vedder, A.M., M.D., Lieutenant Colonel Medical Corps United States Army. Published by Permission of the Surgeon General, United States Army. Lea and Febiger. Price \$2.25.

The importance of the subject is set forth in the introduction in a statistical way as the disease appears in the United States.

In chapter one the prevalence of syphilis is arranged in group incidence as it appears in classes. It appears that syphilis is found most frequently in the upper and lower class while agricultural laborers are relatively free. The author presents statistics of syphilis in other countries. It appears most prevalent in Russia. In other European countries the prevalence as far as can be determined does not materially differ. An authority quoted by the author states that "Roughly speaking, one may say that most German men have had gonorrhea and about one in five syphilis."

Returning to the United States the statistics show that from 10 to 18 per cent. of the population suffers from syphilis. It is alleged that syphilis and gonorrhea vastly over-shadow all other diseases both acute and chronic. The author then proceeds to consider groups from a statistical point of view and then a discussion on the sources of infection followed by methods of transmission. A considerable portion of the book is devoted to questions of methods to prevent genital transmission and methods of control. Then syphilis is thoughtfully considered as a social problem. At this time when venereal diseases are being considered as never before; when conservation of men and women is one of the most important questions before the public the appearance of Colonel Vedder's book is most opportune. It contains information of the greatest value to those actively engaged in propaganda for betterment and should be read with much care.

THE WAY OUT OF WAR

Notes on the Biology of the Subject by Robert T. Morris, F.A.C.S., New York City.

Doubleday, Page & Co., Garden City, New York, 1918. Price \$1.00.

Literary people from every class are answering the call to write a book on the war. It is very interesting to note the viewpoint of the author; the financier; the economist; the historian; the philosopher, etc. Now comes the surgeon who finds that the fundamental fact in war is biological. That when protoplasm has reached the senescent period it tends to disappear to be replaced by other strong varietal types and that when cultural limitations are reached, it is followed by decline. Dr. Morris believes that Germany reached its height in Goethe and reached its cultural limitations about the beginning of the present century; that William the second is the meteoric dust from breaking apart of the unequal expansion of the military clique; that nations represent nature's efforts at trying out different varieties of organisms in order to establish certain types best fitted for conducting evolution. Dr. Morris traces out the evolution of the Roman Empire; the period of Rome's cultural limitations and its decline. That Rome and the German Empire showed the signs of decline in the acceptance of the Divine Rights of Kings; that the allied nations which questioned the conduct of its rulers were still in the stage of protoplasmic evolution, and that cultural limitations have not been reached. That Germany under its present order has reached protoplasmic senescence and must obey the law of evolution and must disappear. Dr. Morris has worked out a biological evolution applied to nations and shows the laws that must govern protoplasmic evolution and the evolution of nations and the struggles that are inevitable.

ORAL SEPSIS IN ITS RELATIONSHIP TO SYSTEMIC DISEASE

By William W. Duke, M.D., Ph.B., Kansas City, Mo. Professor of Experimental Medicine in the University of Kansas School of Medicine; Professor in the Department of Medicine in Western Dental College. Visiting Physician to Christian Church Hospital and Consulting Physician of other Hospitals. With 170 Illustrations. C. V. Mosby Company, St. Louis, Mo., 1918.

The interest which has been awakened in recent years as to the relation of infected teeth to certain diseases which are recognized to be of infectious origin has led physicians into speculations, some perhaps of an unwarranted nature. That there is a solid foundation for the belief that ill health is often due to defective teeth there can be no doubt, and it is this belief that leads us to welcome Dr. Duke's book which points in a conservative manner to the knowledge gained by careful study of diseased teeth and related ill health.

The author by means of radiographs shows numerous instances of defective teeth which are a source of irritation, lessen resistance and favor foci

of infection. The reader will find in this book much valuable information on the subject.

A DIABETIC MANUAL FOR THE MUTUAL USE OF DOCTOR AND PATIENT

By Elliott P. Joslin, M.D., Assistant Professor of Medicine. Harvard Medical School, Consulting Physician Boston City Hospital. Illustrated. Lea and Febiger 706-10 Sanson Street, Philadelphia, 1918. Price \$1.75.

Professor Joslin is so well known in relation to the modern treatment of diabetes that little may be said in introducing this manual to the profession. Drug treatment is of so little value and diet of so much value, that we feel the need of studying out a method of definite application of dietary treatment. For many years we have known that the diet of a diabetic should be regulated, but a definite method had not been worked out. Dr. Joslin presents the main features of a treatment which has proved of immense value. The physician has now little excuse for not giving his patient the best chance for improvement, of recovery, or at least a marked opportunity of very materially lengthening his life.

RECLAIMING THE MAIMED

A Hand Book of Physical Therapy, by Tait McKenzie, M.D., Major R.A.M.C. Professor of Physical Therapy, University of Pennsylvania. Illustrated. The Macmillan Company, N. Y., 1918. Price \$2.00.

The great war has brought to our attention more than ever before the importance of reclaiming those that have been injured, to the highest degree of usefulness possible. The need of reclaiming crippled men existed before but then manpower had not appealed to us as now when the great struggle demands all we have, not only for war but for industries. It appeals to us now not only for the war and industrial value of men but because we feel it a duty from a humanitarian point of view to put disabled men in a position of relative independency. The wrecks of industry and now of war, were a nightmare to us. But happily men of broad vision, by thought and study have devised ways and means to repair the wastage and overcome the horror of witnessing the hopeless wrecks of humanity who otherwise would be charges on public or private charity. Major Tait McKenzie through the Macmillan Company has placed at our disposal a most excellent handbook which will help the profession to make contributions in a way of restoration to service and comfort. We have in mind the necessity for this work, but we need in addition a discussion of details, how to proceed, the means necessary, etc. With the exception of a few trained specialists most of us must become pupils of those who have had the opportunity to observe and study the most approved methods of carrying out plans of reclamation.

THE MEDICAL CLINICS OF NORTH AMERICA

Vol. I, No. 5, March, 1918. W. B. Saunders Company, Philadelphia and London. Price Per Year \$10.00.

This number of Clinics is of special value in that it presents cases of unusual interest recited in sufficient detail to be particularly instructive. Dr. Charles L. Mix takes up Aortic Regurgitation, Arthritis, and Aneurism on a syphilitic basis considering rheumatic heart, syphilitic heart, renal heart, and arteriosclerotic heart, and points out the different effects of these conditions on the heart. The conditions of the organ as influenced by rheumatic infection, syphilitic infection and then nephritic, the changes incident to arterial changes and increased blood-pressure, considers from the heart findings which group the case belongs to. Dr. Mix presents clinic cases to illustrate the several points. Dr. Solomon Strouse considers diabetes and the Karell Treatment of Edema and the importance of details in the treatment of Angina Pectoris, subjects of so much interest and stops to study the cases with unusual care. Dr. Frederick Tice considers Epidemic Respiratory Infection. This subject during the past year both in civil and military practice has been a matter of great importance and a contribution from one who can speak with authority will be welcomed. Dr. Williamson presents an interesting case of polycythemia which had been diagnosed as pernicious anemia and nilhlogenous leukemia. A considerable number of cases are presented as studies in differential diagnosis.

LOCAL AND REGIONAL ANESTHESIA INCLUDING ANALGESIA

By Carroll W. Allen, M.D., of Tulane University, New Orleans, With an Introduction by Rudolph Matas, M.D., of Tulane University, New Orleans. Second Edition Reset, Octavo of 674 Pages With 260 Illustrations. W. B. Saunders Company, 1917. Cloth \$6.50 Net.

Three years ago we had the opportunity to review the first edition of Professor Allen's book on Local Anesthesia. Since that time experience has accumulated on this method of relieving pain in surgical operations, and many surgeons have employed it more or less extensively. Local anesthesia has now become so well recognized that it is only a question of technic and the extending of the method into new fields of operative work. The author has added some new work, particularly in operations on the prostate gland in which a general anesthesia has added so much danger. After some chapters on questions necessary to consider, the effects of local measures on nerves are set forth, after which various agents known to relieve or lessen pain are mentioned and the objection to their use, toxicology, etc. Two chapters on Adrenalin and its particular value in hemor-

rhage, its preparation, and the technic of its use. Two chapters on the use of morphine and scopolamin and its indications and contra-indications. A chapter on Anoci-Association which Crile has told us so much about. Quinine and urea is only briefly mentioned as the author confesses he has had no experience with this agent. Cocain and novocain are the agents of choice with a preference for cocain when cautiously and carefully used. Considerable space is given to the consideration of spinal analgesia and cording to Prof. Allen the contra-indications are so numerous and important as to restrict its use within rather narrow limits.

The greater part of the book is devoted to fields of surgical usefulness and technic. We most cordially recommend this book to surgeons interested in local anesthesia and to those who have given little consideration to this growing and modern method of inducing anesthesia in a large class of surgical operations, we advise a careful study of the subject as presented by Dr. Allen.

A MANUAL OF POISONOUS PLANTS

Chiefly of Eastern North America With Brief Notes on Economic and Medicinal Plants and Numerous Illustrations by L. H. Pannell, Ph.D., Professor of Botany, Iowa State College, Agriculture and Mechanic Arts of 980 Pages. The Torch Press, Cedar Rapids, Iowa. Price \$5.00. Express 35 Cents.

Professor Pannell has become a recognized authority on the subject treated of in this book of nearly 1000 pages. In the preface it is stated that the broadest interpretation has been placed on the subject of poisonous plants and the author has included all plants that are injurious although "most of these are not known to produce poisons, some even being most useful economic plants and yet injurious to some people" and has offered the following definition of poisons: "Any substance that, when taken into the system acts in a noxious manner by means not mechanical tending to cause death or serious detriment to health." The plan of the work is to take up different groups of plants and present the manner in which they become harmful, the symptoms and treatment. For instance, bacterial poisons in their influence on sources of water supply. The plants that produce skin irritation or dermatitis. Forage plants that produce stomach and intestinal irritation and other lesions. Poisoning from fungi, etc. Poisoning from opium, solanaceæ and plants that contain saponins. Poisoning from flowers, poisoning from honey, mechanical injuries. Then comes a classification of poisons, production of poisons in plants and so on through a long list of injurious plants.

The book contains an exhaustive resume of the subject of plants dangerous to life and injurious to the health of man and animals, interesting to physicians, veterinarians and the general public.

SOCIETY PROCEEDINGS

The Plymouth County Medical Society met at the Commercial Club rooms in Le Mars October 1 at 8:30 p. m. Meeting was called to order by President W. H. Heller, and upon roll call, the following members responded: Brunner, Fettes, Heller, Jastram, Joynt, Lamb, Larsen, Mammen, and Reeves.

The minutes of the last meeting were read and approved. Dr. Brunner reported a case of bilateral mumps in a female fifty-one years old, this female having passed the menopause five years before. Upon the subsidence of the swelling in the parotid glands, both breasts enlarged enormously, and a severe pain developed in the region of the ovaries, followed by a very copious uterine hemorrhage which lasted for three days. Dr. Larsen reported a case of enlarged thymus in a child four months old, successfully treated with the x-ray.

The following papers were then read: "The Treatment of Pneumonia, by Sera, as developed in the Rockefeller Institute" by Dr. Larsen. "Submucous Resection of the Nasal Septum," by Dr. Joynt. The technique of this operation was described in minute detail. Dr. Brunner gave an interesting talk on "Anaphylaxis."

The next meeting will be held in Le Mars on the evening of December 3rd, at which time Drs. Lamb and Robbins will present papers.

A. J. Jastram, Sec'y.

COMING MEETINGS

The Southwestern Iowa Medical Society will hold its annual meeting in Shenandoah Tuesday, September 3rd.

Place of meeting, Elks Home.

Officers' headquarters, Hotel Doty.

Dr. J. Ohlmacher, president, Clarinda, Iowa.

Dr. Enos Mitchell, secretary, Grand River, Iowa.

In the evening an address will be given to the public at the Elks Home to which all are invited, by a member of the State Medical Board. This does not show on the program which is given as follows.

9:30 a. m.

1. Reading of the minutes.
2. Round Table—Dr. F. E. Sampson, leader, Creston, Iowa. Subject, "The Physician in His Relation to War Activities."
3. X-ray Interpretations, Dr. Barnes, Shenandoah.
4. Dietetics in Children—Dr. Stottler, Shenandoah.
5. Election of officers.

Dinner

6. President's Address—Dr. J. C. Ohlmacher, Clarinda.
7. Anesthetics—Dr. J. C. Goad, Afton.
8. Enteritis in Children—Dr. Edward Luke, Coin.

9. The Acute Abdomen in Children—Dr. Fred Bowman, Leon. Discussed by Dr. G. I. Armitage, Murray.

10. The Decatur County Method of Examining Registrants—Dr. B. L. Eiker, Leon.

11. The Differentiation Between Benign and Malignant Tumors of the Female Breast—Dr. J. C. Summers, Omaha, Nebraska. Discussion opened by Dr. F. E. Sampson, Creston.

12. Prostatic Hypertrophy—Dr. E. E. Bamford, Centerville. Discussion opened by Dr. B. Eiker, Leon.

13. Aids to Efficient Work in Surgery—Dr. B. B. Davis, Omaha, Nebraska.

Supper

14. A Plea for More Extensive Use of Sera, Antitoxins, etc., by a representative of E. R. Squibb & Co.

DEATHS

Mrs. R. S. Conner, wife of Dr. R. S. Conner, Thirty-sixth and Ingersoll ave., Des Moines.

The memorial services for Merritt Winsell were held in the Community House on Sunday afternoon, August 11, in the presence of one of the largest audiences ever assembled in the Community House. It was a great tribute to the sorrowing relatives and the life of the young man which had been given so freely for our protection. An abundance of floral offerings were contributed by old friends and neighbors and orders and clubs with whom the family had been previously affiliated. The service was union, both pastors Revs. Ilgen Fritz and Goff taking part in the service and a union choir rendered patriotic music.

Merritt Peebler Winsell, son of Dr. F. F. and Ada B. Winsell was born at Drakeville, Davis county, Ia., February 11, 1898. Died somewhere in France, July 3, 1918, at the age of twenty years, four months, and twenty-two days. His mother died in 1904.

He leaves to mourn his death, father, one sister, Mrs. H. F. J. Lake of Centralia, Mo., step-mother Jessie D. Winsell, step-sister Berenice Marie Brimm.

Merritt received most of his education in the public schools of Dexter, having graduated from high school in May, 1916. He united with the Presbyterian church when a lad.

He enlisted in United States Army April 21, 1917, in the 32nd Aero Squadron Signal Corps, and left for France August 27, 1917, arriving sometime in September, remaining there until death.

He has given his all for justice and liberty. He has made the supreme sacrifice.

BIRTHS

Born, a son to Dr. and Mrs. W. R. Garretson, Des Moines, Iowa.

Born, a son to Dr. and Mrs. M. B. Latimer, Corn-
ing.

4 Useful Products

CHYMOGEN removes the only objection to milk as a food for infants and invalids by preventing the formation of clots or curds without in any way altering the taste or value.

Chymogen precipitates the casein in small flocculent particles which are easily reached and digested. Full directions on request.

CORPUS LUTEUM (Armour) in the neuroses of women is dependable as it is made from selected true substance.

PITUITARY LIQUID (Armour) is standardized physiologically and is without the inhibiting chemicals used as preservatives in other preparations of the kind.

1/2cc for obstetrical. 1 cc for surgical use.

THROMBOPLASTIN SOLUTION (Armour)
is a specific hemostatic, in 25cc bottles.

ARMOUR AND COMPANY
2569
CHICAGO



Take Advantage of Our

OCULIST CO-OPERATIVE POLICY

A Combination of

"SELF - RITE" and "EVER - LOCT" MOUNTINGS
ACCURATE, PROMPT PRESCRIPTION SERVICE

And a policy of distribution, which has been the means of our
rapidly becoming the oculist's favorite prescription house.

Write for particulars

UHLEMANN OPTICAL COMPANY

Mallors Building

5 S. Wabash Ave.

CHICAGO

MARRIAGES

Dr. F. W. Nilhouse of McClelland, Ia., to Mrs. Effie Vliet of Omaha at Camp Lee, Petersburg, Va.
 Dr. John Humphrey to Miss Regina Driscoll, 2901 Ingersoll ave., Des Moines, Ia.

MEDICAL NEWS NOTES

The Best Hotel of Traer is to be converted into a hospital by Dr. Wild.

Dr. R. A. Dunkelberg of Waterloo is reported to be seriously ill at his home.

Dr. D. N. Roove has returned home from the hospital at Waverly under treatment much improved.

Captain Hugh Mullarky has been promoted and assigned to remount station, Camp Joseph E. Johnson, Florida.

Major Ralph L. Byrnes and wife left for New Haven, Conn., where the Major will join the United States general hospital staff.

Dr. J. G. Stone of West Grove recently submitted to an operation to qualify him for service in the United States Army M. R. C.

Dr. Burl Houston has been given a leave of absence for the purpose of closing up business. Dr. Houston has a wife and baby to provide for.

Drs. R. M. and Elizabeth Chaffin will care for the practice of Dr. Bush Houston of Nevada who has entered the service of the United States M. R. C.

Dr. Q. C. Fuller has been appointed a member of the Draft Board for Dickenson county to succeed Dr. J. D. Geissinger resigned to enter Army service as Captain M. R. C.

Dubuque is raising an appreciation fund for the Mayo Foundation research work in infantile paralysis as a testimonial to Dr. Rosenow's work in the recent outbreak of this disease.

Dr. R. B. H. Gradwohl, director of the Gradwohl Biological Laboratories, St. Louis, has been appointed organizing director and chief of Naval Base Hospital Unit No. 19 with the rank of lieutenant commander.

Dr. Nelle Noble gave a complementary dinner to the women conducting the baby health department. Mrs. Charles G. Walner, Miss Beulah Collier of Atlanta; Dr. Gladys Cooper, Dr. Velera F. Powell, Red Oak; Dr. Lena Beach, Rockwell City; Dr. Jeanette Throckmorton, Chariton; Dr. Kate Harpel, Boone; Dr. Agnes Eichelberger, Sioux City; Dr. Josephine Rust, Grinnell; Miss Virginia Henney, Mitchellville; Miss Joyce Laplam, Ellen Smith Teller, Dr. Lenna L. Means, Dr. Lucy Harbach, and Dr. Sophia Hinze Scott, Des Moines.

Attention is called to the announcement of the Bayer Company in this number, advertizing section page iii.

The medical profession need not hesitate to prescribe or use the products put out by this firm as it is now 100 per cent. American.

A SUGGESTION FOR SPANISH INFLUENZA

In view of success obtained by Woolley, at Camp Greene, and by McCord, Friedlander and Walker at Camp Sherman, in preventing diseases of the upper respiratory tract, such as meningitis, measles, pneumonia and diphtheria, by local use of Chlorazene and Dichloramine-T solutions, it is reasonable to believe that equally good results can be obtained with the same remedies in the prevention and cure of Spanish Influenza.

The method employed at Camp Greene was to gargle or spray the throat three or four times daily with 0.25 per cent. solutions of Chlorazene. The nasal pharyngeal tract was then sprayed twice a day, or more frequently, with 2 per cent. Dichloramine-T solution in Chlorcosane.

This treatment, in association with aspirin and other salicylates, and the generous use of bacterins, has much promise.

Chlorazene, Dichloramine-T and Chlorcosane are obtainable from The Abbott Laboratories, Chicago, Illinois, which is supplying thousands of pounds of these products to the United States Army and Navy.

"THE ONE SUPREME AUTHORITY"

The New International is the latest and best of a long family of Merriam-Webster Dictionaries each in its time recognized as the "Supreme Authority." Hundreds of thousands of successful men and women daily go to this wonderful storehouse of accurate information. They dare not risk a mistake. Today facts are demanded as never before. Exact knowledge is indispensable. The New International stands the test. It contains a concise, up-to-date answer to all kinds of questions as: Where is Lombardy, Brittany? What is a cordon, terrain, salvo, or Diesel engine? What is the correct pronunciation of cantonment?

It insures you against embarrassing errors in spelling, pronunciation, and choice of words. It is an all-knowing teacher, a universal question answer, a necessity to every successful business and professional man, a constant source of education and interest to all members of your home. Indispensable to the teacher and student. Keep abreast with the times. To know means to win success.

New Words—A new word holds our interest and, until we learn its meaning, carries a certain mystery. A prominent university president says: "By giving the coinage of new words the New International becomes not only a history of the enlargement of the language, but gives a view of the advances in arts and sciences by showing the growing necessity for new words to express adequately and clearly new discoveries and conditions."

G. & C. Merriam Company, publishers, Springfield, Mass. See announcement advertising section.

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, NOVEMBER 15, 1918

No. 11

THE RELATIONSHIP OF RESPIRATORY INFECTION TO DIGESTIVE DIS- TURBANCES IN INFANTS AND CHILDREN*

ALBERT H. BYFIELD, M.D., Iowa City

From the Department of Pediatrics, State University of Iowa,
Iowa City

The frequency and commonness of gastroenteric disturbances in infants and children is known to all and one is, indeed, accustomed to regard this age as characterized by such troubles. While slight acute and chronic affections are the rule, nevertheless, serious disability and even death may result, more often in the infant than in the older child. For some reason or other, these manifestations have become too often regarded as clinical disorders in themselves, whereas, as a matter of fact, they are not infrequently due to a pathological process distant from the trouble complained of. In other words, the gastroenteric picture has dominated the clinical scene. As a result of three years' experience in our Children's Clinic, we have been impressed with the fact that of such distant causes, the affections of the respiratory tract take a prominent place and it is the purpose of this paper to mention a few of the more important symptoms and clinical pictures of digestive disturbances brought about by respiratory infection.

We have become accustomed to the conception "focal infection" and a series of symptoms following in its train. Of these, digestive disturbances occupy a minor place in the adult. In childhood this greater sensitiveness of the gastroenteric tract has deserved greater prominence. Respiratory infection, and by that I mean infection of the nose, accessory sinuses, ears, pharynx, trachea, bronchi and lungs, may be regarded as part of the struggle for existence. The germs form a part of our environment and we must adapt ourselves to them by the process of infection and immunity. Consequently, we should, perhaps, include respiratory infection with gas-

troenteric disturbances as the lot of childhood. Let us first consider in turn a group of symptoms and indicate by reference to clinical experiences a few examples.

Anorexia, loss of appetite and capricious appetite are often seen in infants and children. In an acute case of pharyngitis of a young infant food may be actually refused and this refusal may be due to localized pain in the throat or to the effects of the prostration. Often enough it is the former and this can easily be explained both by an examination of the tonsils and pharynx (too often omitted in the case of the infant) which will be seen to be swollen, reddened and with a loss of lustre; and, by remembering that in our own experience adults also may be so distressed by throat pain that eating becomes intolerable. With the passing of the acute stage of the infection, this symptom passes away. In persistent and chronic anorexia, or in the more common trouble so often complained of by mothers, capricious appetite, we may have to deal with a chronic type of respiratory infection. Its mechanism cannot be clearly explained in every case. If there happens to be a nasal discharge composed of mucus and pus, therefore including bacteria, it is easy to assume that this material, when swallowed, might set up a chronic gastric catarrh. That such mucous discharges are frequently swallowed by children can be noted by any one who will take pains to observe a child's actions. Gastric lavage performed on infants with respiratory infection and anorexia will often reveal the presence of a surprisingly large quantity of mucus, the removal of which will not infrequently give relief where other therapy has failed. Again, we may have to assume that there may be a chronic toxic effect on the nervous system in certain susceptible individuals, so that the loss of appetite, as in the adult, is to be regarded as a functional neurosis.

Vomiting may be present as a symptom in acute respiratory infection just as was the anorexia mentioned above. Similarly, chronic and habitual vomiting may follow upon a chronic respiratory infection. I recall one case particularly in

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 9, 10, 11, 1918.

which, during the convalescence from scarlet fever, the child presented much mucus in the nasopharynx. After each injection of food the child would calmly turn its head to one side and heave up its gastric contents. Following the removal of the tonsils and adenoids, this regurgitation at once ceased.

A coated tongue and foul breath are also not infrequently associated with the above causes. When not due to decayed teeth or to a demonstrable error in diet, infection of the nose and throat must always be considered.

We have not found chronic abdominal pain to be a common complaint, but nevertheless, in one instance at least, it would seem that a so-called appendicitis was, in all reality, brought about by an intense "nasal catarrh." This patient is still under observation. Needless to say, other causes of abdominal pain were ruled out. The presence of mucus in the stools of infants and older children, when not due to a demonstrable error in diet or to a pathological lesion of the intestine may almost invariably be traced to some form of respiratory infection. In infants, this appearance of mucus with or without an increase in the number of stools has led to so much useless and even harmful drugging that I feel it the greatest importance to emphasize the fact that food is far from being the only possible cause of a change in the character of the stool.

Not only are separate symptoms referable to infection, but diseases or clinical syndromes are undoubtedly to be linked with commonly overlooked causes. Of these, that most interesting infection known as periodic or cyclic vomiting is placed by us at the head of the list. By cyclic or periodic vomiting, we understand the appearance at intervals, regular or otherwise, of fever, obstinate vomiting and an acidosis which may or may not become clinically manifest. While the etiology of this interesting condition is still in dispute, careful clinical examination of history and patient reveal that sore throat or nasal infection almost invariably precedes the attack. The high temperature can only mean infection. The observant mother, if carefully questioned, will tell that mucus and undigested particles are passed in the stools or that these take on a clayish color.

The complicating acidosis in the severe cases has attracted the most attention, although the obstinate vomiting (not even water can be retained) has given the name to the disease. Interesting confirmatory evidence of the infectious origin of these attacks is found in the fact that a similar attack may follow the removal of tonsils and adenoids—a diagnosis of post-operative acidosis being made. To my mind this is no more than

an attack of cyclic vomiting brought about by the inevitable infection of the field of operation. The youngest patient that I have seen suffering with this trouble was aged one year.

In the cases observed in the clinic and privately, removal of the source of infection is followed in the largest number of cases by striking benefit, if not complete cure.

Enteritis, or the acute diarrhoea of infants is usually believed to be due to food. That this is not the case must be clear to any one who remembers the fact that a similar trouble may occur in the breast fed baby, whose feeding is well ordered and whose food surely cannot be criticised. Similarly it will be seen in those infants for whom the milk is pasteurized. In our own wards we expect two or three times each year to have an epidemic of this troublesome disturbance, the bane of children's hospitals and asylums.

First, one baby, is affected, and, in succession, the others are affected. There is an associated rise in temperature, stools are frequent, passed at night, contain mucus and may contain blood. The loss in weight and the prostration are often marked. Investigation of the throat will reveal in practically every case the unmistakable evidences of a pharyngitis or tonsillitis. We have not been able to find any possible error in diet which could explain either the disease or the epidemiology.

The importance of such diagnosis lies in the fact that if the etiology is not correctly appraised, and if one attempts by catharsis or protracted starvation to obtain a cure, one has one's trouble for one's pains. During the acute stage of the disease, to be sure, boiling of the milk or the administration of albumin milk, or its equivalent, is indicated. The underfeeding or starvation must not be carried on too long, however, because the only result will be failure to gain and the lowering of resistance of the child. Mucus may appear in the stools for a long time and still the food tolerance be quite normal.

Some of these cases of enteritis lead to death and when this occurs in the seasons when respiratory infection is most common and when the disease picture is one of marked prostration and toxemia, an examination of the ears is always indicated. In the French literature I found a report of a series of such cases in which at autopsy otitis was found, not suspected because of the fact that attention was concentrated upon the frequency of the stools. In older children the severe and often fatal cases of ileocolitis or dysentery may follow respiratory infection. Here again, the severity of the symptoms and the major com-

plaint overshadow the initial tonsillitis which may be to blame.

That lobar pneumonia in adults is at times ushered in with symptoms pointing to acute abdominal disease is well known to you all. That it may behave similarly in children is also known. The fact, however, that in an infant of only six weeks, severe abdominal pain suggesting intussusception initiated an attack of lobar pneumonia came to us as a surprise. In the absence of demonstrable pathology of the abdominal viscera examination of the thorax revealed a lower lobe pneumonia together with a congenital heart murmur. These findings were confirmed at autopsy. Severe abdominal symptoms are to be expected in lower lobe pneumonia and the associated distention so distressing to the patient, may, at times, be relieved by counter irritation applied over the affected lobe of the lung rather than to the abdomen.

A few points remain to be emphasized. In the first place, one cannot always rely on the statements of parents as to the existence of the respiratory infection. To the unobserving mother a mucopurulent discharge from the nose may seem insignificant. Again, many children with tonsillitis and pharyngitis do not refer their distress to the seat of the trouble. It must also be remembered that not every diseased tonsil is large. In case of doubt, examination of the tonsillar glands at the angle of the jaw will indicate whether or not infection is present. We have come, in this clinic, to realize that infection of the accessory sinuses in children is of extreme commonness. The post-nasal mucopurulent discharge, sneezing, headache, unexplained fever, nasal obstruction and depression are some of the signs and symptoms pointing to such involvement. These troubles demand careful topical study and treatment. The commonest source of infection in such cases seems to be some member of the family. I have the feeling, shared by other observers, that there are such things as "catarrhal families."

With regard to the therapy, it may be stated that prophylaxis, where feasible, is the desirable condition. At any rate, it would be safer to have children spared the exposure to adults suffering with severe "colds" or sore throat. The part that over-heated, dry atmosphere plays in lowering the resistance of the nasal mucous membrane is said by some to be a significant one. General educative measures may possibly give help in this direction.

A respiratory infection, once initiated, must run its course, although palliative measures may be of service. The initial mild laxative, vaseline

in the nose, wet compress to the neck and the wet or mustard pack are the remedies of choice. While mild laxatives may be used in the first days to remove infected mucus, the giving of cathartics until the stools are normal is wrong and may do harm. In extreme instances of which I recall two, a patient has been purged into a state of marasmus. In infants, the boiling of the milk for a few days is often of great help. In any event, the source of infection should be located wherever possible. In the case of cyclic vomiting, especially, the most satisfactory results will be expected to follow the adequate treatment of the respiratory infection.

The following conclusions would seem to be justified:

1. Infection of the respiratory tract is not an uncommon cause of many acute and chronic gastroenteric disturbances.
2. In every case where fever is present at some time or other in the disease and where mucus appears in the stools, such infection should be suspected and an attempt made to detect the same.
3. Certain clinical conditions, such as periodic vomiting, may be stated to be almost invariably due to respiratory infection.
4. The treatment of secondary gastroenteric disturbances should take into account the casual factors.

Discussion

Dr. Fred Moore, Des Moines—Ir. children, and particularly in infants, I think one should always recognize that a respiratory infection soon becomes a general infection, and that in the extension of this infection from the respiratory tract the alimentary tract is usually the first to show the secondary disturbance—a disturbance which in many instances we would very much like to avoid. The cases in which we see this secondary disturbance are practically of two types: First, the chronic disturbance in children of early age, with regard to which the mother states that the child is neither sick nor well, but is not right—and she is inclined to attribute all disturbance to the stomach or intestine. There is the usual story of gastric disturbances characterized by more or less abnormal stools. Careful examination in many of these cases, as has been pointed out, will demonstrate infections of the respiratory tract. Sometimes it has to be borne pretty hard upon the parent that these are responsible for the disturbance which is manifestly one of the gastrointestinal tract. When the infection is that of the tonsils and tonsillectomy is performed, the result, as far as the mother is concerned, is sometimes disappointing because, as too often is the case, she simply depends for cure upon the removal of the tonsils. When that is done she feels that her duty is ended and the child should

forthwith be well. I think that is one of the reasons why, as far as the general health is concerned, the result of tonsillectomy is often disappointing. To the fact that the mother is not sufficiently instructed in the after-care of the child, or, if instructed, does not sufficiently follow the after-treatment of the child with reference to the gastrointestinal disturbance by way of feeding and general care, is due the failure in results. This factor is, I believe, quite as important as the removal of the focus itself. That is one reason why removal of the focus is not always followed by the immediate relief of symptoms. Second, the gastrointestinal disturbance of infants in acute infections of the respiratory tract. It is very important indeed that the gastrointestinal tract be kept as free of trouble and in as nearly normal condition as is possible. Most of the cases of respiratory infection that I have seen have already been liberally purged with any one of a number of familiar drugs with rather indifferent results, and the trouble persists just the same.

Dr. Byfield—In conclusion, I wish only to take this opportunity of again calling attention to the fact that minor ailments of children, as discussed above, should receive more attention than they do even though they are not as immediately dangerous as are more well-marked clinical syndromes. These children are to be our future soldiers and citizens and even slight troubles may lay the foundation of later years of illness and inefficiency. It might be objected by some that respiratory troubles are simply temporary manifestations coming with bad weather and bad climate. Even if this is so, we must take them into consideration, provided they produce children who are ailing, poor students at school or unhappy members of family or society. In my series of cases of cyclic vomiting, I have sent letters to the parents inquiring as to the results of operative treatment. All of the children but one had been treated by tonsillectomy. In this single case some other physicians had not urged operative treatment, and, in striking contrast with the replies from those mothers whose children were operated, came the statement that this child had had four or five severe attacks since it had been seen by me in the hospital. What Doctor Moore has said about tonsillectomy not being a cure-all is true. With clear indications and with the operation correctly performed, benefit is to be expected in a large percentage of cases. It is true, of course, that there are other possible factors which may cause digestive disturbances. These must be recognized and corrected. Another cause of the failure of tonsillectomy to relieve symptoms, however, will be other and perhaps unrecognized foci of infection. I recall such a case in which both antra of Highmore were filled with pus and the tonsils and adenoids were removed with the hope that the antra would drain themselves. This hope, however, was not fulfilled and the child's symptoms persisted. This does not affect the validity of my thesis that respiratory infection plays a large part in causing digestive disturbances.

PELLAGRA IN IOWA—WITH CASE REPORTS

F. A. ELY, M.D., Des Moines

The only legitimate function of medical literature is educational. In presenting these case reports, my justification is in calling the attention of the medical practitioners of Iowa, to the fact that pellagra is in our midst, and in all probability, much more prevalent than is generally believed.

During the past five years it has been my privilege to observe three typical cases of this disease, in which the diagnosis was beyond all question, and two others in chronic alcoholics, in which the diagnosis was very definite, but as continued observation was not permitted me, I am unable to speak of them with the same diagnostic assurance as of the others. Through two or three other competent observers, I have learned of additional cases, the diagnosis in which seems reasonably certain. An obscure nutritional disorder came to my notice recently, in a young woman eighteen years of age, who developed, after a period of dieting for obesity, a progressively fatal marasmic difficulty, with nervous and mental disturbance, in which a tentative diagnosis of pellagra was made by me, and yet the clinical phenomena were not definite enough to justify a report.

There are perhaps, as many theories as to the causation of pellagra as in any other obscure disease now recognized, and after threshing out the literature, I am led to the conclusion that the problem is far from a positive solution. The two chief contentions are—that it is a parasitic disease possibly conveyed by a carrier, on the one hand, or that it is a disease resulting from faulty metabolism or food poisoning, on the other. The original theory was, that the malady is due to some form of food poisoning, most probably some toxin derived from cornmeal. This theory has been supported until recently, by the fact that the disease is more prevalent among corn meal eating people.

During the past few years, however, pellagra has been reported as occurring in almost every state in the Union, and in localities where corn meal has not been one of the staples of diet.

An attempt has been made by some investigators to show that the disease is transmitted by a variety of insect, the *Similium reptans*, but this theory is as yet, not sufficiently supported. During the past five years the corn theory has been approached from another angle, and an attempt made to demonstrate that the modern processes of milling have a tendency to remove or destroy,

the vitamins which exist naturally in the freshly ground corn which has not been heated, nor the germinal element eliminated, during the process of preparation. On the same hypothesis that beri beri is dependent for its origin on the lack of vitamins in the polished rice, so it is thought that modern processes of milling, by destroying the vitamins in corn meal, are responsible for the production of pellagra.

Wood¹ and Goldberg² called attention to the following interesting facts: First, that in the process of milling, the corn is heated to a temperature of 120° C. a temperature sufficient to destroy the vitamins, and that to prevent souring and heating, the germinal element is eliminated; second, that prisoners in some of the southern districts, when fed upon commercial corn meal, fell an easy prey to pellagra, whereas the disease was quickly controlled by establishing a mill in the prison, whereby the whole substance of the corn might be obtained in the meal; third, that although the hygienic condition of the southern mountaineers is equally as bad as that of the people living in the urban districts, pellagra is relatively unknown among the former, and quite prevalent among the latter, possibly due to the fact that those in the urban districts can obtain the commercially prepared corn meal, whereas the mountaineers depend upon local mills, where the modernized methods of eliminating the vitamins are not used.

Jobling and Maxwell³ approaching the subject of pellagra from a metabolic point of view, attempted to determine the presence or absence of an alteration of the alkaline reserve in the blood, also any changes from the normal in the viscosity of blood in pellagrins. As a result of their investigations, they were unable to report any deviations from the normal in the alkaline metabolism, and only a slight reduction of the coagulability of the blood.

Working along slightly similar lines, only from the clinical side, much work has been done in the south especially among the prison population, in an attempt to prove that a diet low in proteids is a causative factor in pellagra. It was found in these experiments that prisoners in comparative health, when isolated and deprived of animal proteids, rapidly developed pellagra, whereas an equal number fed on a diet rich in animal proteids, rapidly developed pellagra, whereas an equal number fed on a diet rich in animal proteids were immune.

From these brief references to theories and ex-

perimental work, it may be readily observed that the true cause of Pellagra is as yet, undetermined, but the following conclusions seem justified:

First—That whatever the cause may be, pellagra is a disease in which metabolism and nutrition primarily suffer.

Second—That states of lowered vitality due either to senility, chronic disease states, or poor food conditions, predispose persons, so suffering, to pellagra.

Third—That a well balanced diet, not lacking in animal proteids, together with a favorable general hygiene, is the best line of prophylaxis and treatment.

Fourth—That further investigations, both clinical and laboratory, are necessary before we can speak with assurance, as to the cause of the disease.

At the request of one of my brother practitioners, on May 23, 1918, I examined one J. L. W., who entered the Iowa Methodist Hospital for examination, on that date. The case history, as obtained from the man himself, and from his wife, together with the examination, is herewith given.

Case Report

Mr. J. L. W., Ankeny, Iowa.—Farmer, fifty-nine years of age. The father of eight healthy children.

Family history—Negative, with the exception that the mother died at seventy-two years of age, and before death, suffered from some form of nervous disorder which caused a tremor of the hands, and was either a senile tremor or Parkinson's disease. No history, whatsoever, of mental trouble in the family, anywhere.

Previous history—Negative, with the exception of typhoid at the age of eighteen, from which he made a good recovery, and a light attack of smallpox, about four years ago. No history, whatever, of previous mental disturbance, nor of any nervous disease.

Present complaint—Rapid emaciation, having lost some forty pounds in weight in the last two years; great debility; tremor of the left hand; muscular rigidity; inability to walk, or stand well. Mental confusion present at all times, but very greatly accentuated during the night hours; marked mental depression; loss of appetite; a dry erythematous dermatitis upon the dorsal surface of both hands; profound exhaustion.

Personal habits—Patient has never used alcohol in any form; no tobacco for twenty years; no history whatever, of venereal infection; has been a hard working farmer, enjoying the best of health, till the winter of 1916-1917.

History of present illness as obtained from wife and patient—In the winter of 1916-1917, wife noticed a tendency on part of patient, to jerk in his sleep at night. At one time during the winter, patient had occasion to load some fodder, and became aware of

1. Journal of A. M. A., vol. lxvi, page 1447, May 6, 1916.

2. Journal of A. M. A., vol. lxvi, page 471, November 7, 1916.

3. Journal of A. M. A., vol. lxix, page 2096, May, 1917.

the fact that the muscles in his shoulders and neck, seemed to be more or less stiff, and rigid, preventing him from pitching on to the load quickly, as had been his former custom. In the spring of 1917, he began to lose his appetite, and grow thin, and seemed to undergo a gradual, general, physical decline. It was then noticed by his wife that he was developing a coarse tremor, confined largely to the left hand. During the spring of 1917, and the subsequent summer and fall, the feeling of exhaustion, bodily rigidity, and loss of weight, continued. During the winter of 1917-1918 it became apparent that patient's mental faculties were beginning to fail. He began to be more or less forgetful, and confused at times, and his wife states that he was always worse in this respect, at night.

During the night hours, he would become confused, and get up and wander around; would talk to persons as being present, who had long been dead, and seemed to be very busy about the previous day's work, and would talk to his companions while performing the chores on the farm.

There always seemed to be another party with him, to whom he would talk. During the day he would be much clearer, mentally, his memory would be fair, and the confusional state seemed to be discontinued. In addition to the other mental peculiarities, patient would frequently complain, on getting up in the morning, of things being changed, and of his not being in his own home, and of his surroundings being entirely strange to him.

On or about, the eighth of March, 1918, after choreing about the farm all day, on entering the house, patient noticed a tingling, burning sensation on the dorsal surfaces of both hands, and upon examination, the skin appeared red and erythematous, the irritation being very similar, indeed, to that of a marked sunburn. After a few days, the skin became dry and brownish, and at the end of two weeks, exhibited a gray exfoliation which is still present at the time of this examination. This skin disorder has never at any time, developed any moisture, but has been dry, harsh, purpleish-red, and more or less, indurated. During the last three months, patient has been going down rapidly, and is still exceedingly confused at night, and greatly emaciated.

On glancing at the patient, one is immediately struck by the characteristic attitude of Parkinson's disease. The face is masked and expressionless; the eyes unblinking; he stands with the trunk flexed slightly upon the thighs, the head back, the chin forward; the upper extremities are slightly flexed at the elbow, and the hands hang on a level with the groins; the fingers are flexed, and in walking, the typical shortstep, stiff, trotting gait of a paralysis agitans is exhibited. In addition, it is readily observed that there are several peculiar brownish, atrophic spots on the skin of the face under the eyes, and over the malar bones, while the hands show the dark, purpleish-red scaly erythematous appearance, previously mentioned in the history. Close inspection demonstrates the fact that this dry, brownish

erythema, is confined to a surface extending from the lower wrist to the bases of the second phalanges, and not extending to the tips of the fingers. The skin is cracked, and grayish exfoliated areas are to be observed. There are no vesicles, and no evidence, whatever, of moisture. There is a tendency to dryness of all the cutaneous surfaces of the body, but there are no other areas, save those upon the hands, which are definitely characteristic. The tongue is rather atrophic, and its edges are hyperemic and irritated. The mucous membrane seems to be engorged, but there are no definite areas of ulceration or hemorrhagic spots.

Physical examination—Pulse 100, regular, soft and of good quality. Temperature undergoing a diurnal variation from 97° F. to 100° F. the higher temperature being manifest in the afternoon.

Blood-pressure—Diastolic, 70. Systolic, 110. Heart and lungs, negative. Slight rigidity of blood-vessel walls, but nothing in extreme. Pupils, prompt to light, accommodation, and consensuality. Eye back grounds, negative. Speech normal, with the exception of a slight tendency to monotony in enunciation. No evidence whatever, of disease of any of the cranial nerves. No evidence whatever, of disturbance of the superficial or deep sensibilities. Several brownish spots of cutaneous atrophy, as previously indicated, over the cheeks and malar bones, on both sides. At times there is a slight tendency to a crumpling tremor of the fingers of the left hand. All the muscles of the body seem resistant to passive motion, and a typical cog-wheel resistance may be obtained, by extending the left forearm upon the arm. The abdominal reflexes are present and normal. The tendon reflexes of the upper extremities are equal and normal. The patellar and Achilles reflexes are slightly over active, but equal. There is a suggestion of a left Babinski and a right Oppenheim. There is no sphincter relaxation. Station and coordination of both upper and lower extremities, undisturbed. The lower extremities, when dependent, become more or less cyanotic.

The neurological examination may be summed up briefly, as follows: There is no disturbance of the functions of the cranial nerves, the patellar and Achilles reflexes are slightly over active, there is a suggestion of a Babinski on the left and an Oppenheim on the right, and all the practical evidences of a Parkinson's disease are present.

The Wassermanns of the blood and spinal fluid are negative, the urine reveals no abnormality, and a blood count demonstrates nothing but a secondary anemia.

Mental examination—This examination was made in the morning and reveals the following points of interest. Memory for past events very good. Patient gave, in logical sequence, all of the various changes in residence which he had made, from his infancy up, computing the years as he went along, and these tallied perfectly with his age. Power of attention, very much better than would appear on casual observation. Patient lay, apparently, in a

semi-conscious state, but comprehended the conversation, referable to his case, as it took place between his wife, and myself. His memory for recent events was poor, and he seemed to be very quickly and readily confused on the simplest mathematical problems. This may possibly be the result of defective education. He was conversant with the market prices of various agricultural products, and with reference to land values of the neighborhood in which he lived.

There was at the time of this examination, no evidence whatever, of disorientation. There was no evidence of illusions or hallucinations. He gave one the impression of simply being too tired and exhausted to be quick at answering questions, and yet when the questions were asked, they were responded to, with a reasonable degree of intelligence. The whole mental aspect, as estimated both from the standpoint of the mental examination, and the history, indicates a combination of mental symptoms, which may be attributable to exhaustion, infection, toxemia or to a presenile confusion so frequently observed in Parkinson's disease, the night exacerbations being present in both exhaustion, toxico-infections and senile confusional states, as is also the tendency to the feeling that everything is changed and disturbed.

The mental state is not at all dissimilar to that observed in other cases of Parkinson's disease, irrespective of the toxic, or exhaustive factor, co-incident with pellagra.

Mrs. J. E. F., Des Moines, Iowa, age sixty-nine, married. Family history, negative. Has had no family. Was born in Canada, fifty miles south of Montreal. At age of five changed her residence to Illinois, where she lived some forty years. Balance of her life has been spent in Iowa, and she has never lived in the south. Previous history, negative.

Present illness—In July, 1913, is said to have had some sort of nervous breakdown, during which she became greatly exhausted, lost weight, and manifested a very marked change of mentality. She became blue, irritable, fault finding and morose. As a result of this trouble, she was confined in a sanatorium for mental diseases. While there she developed a dark, brawny, purpleish erythema on the backs of the hands, which extended part way up the wrists. On returning home, after her stay at the sanatorium, ointments were applied for the skin irritation, and after a week or two, it healed. From that time until the present, however, there has been a distinctly abnormal, morbid, mental state, which chiefly manifests itself by depression, lassitude, irritability, tendency to find fault, complaints against her husband, loss of memory for recent events, slight confusion, and apathy. During the past two weeks there has been a distinct tendency to a restless delirium which is much more pronounced at night, and from which, she very largely recovers during the day time.

An intimate friend states that as far back as the date when she was discharged from the sanatorium,

distinct stiffness and impediment in the gait, was noticeable, and that as time has gone on, this difficulty in walking, has greatly increased until within the past six months, when her legs have become very stiff and difficult to manage, and the feet seemed to have a tendency to drag.

Last November, in addition to the other symptoms present, the patient developed a very severe attack of shingles, and since that time, her physical and mental retrogression has been more pronounced. During the last year or two, she has been treated for gastrointestinal disturbance, without any very great benefit. The physician immediately in charge, has restricted her diet very greatly with reference to the proteins, and very little meat has been used, but the husband states that prior to that time, her diet was a fairly well balanced one, in which meats and proteins were represented in fair amount.

On June 28, I was called to the home to examine Mrs. F., and before going, was advised by the party who called me, that the lady in the house with whom Mrs. F. was staying, thought she was suffering from pellagra, although the attending physician had not suggested that diagnosis. Much to my surprise, on entering the room and grasping the patient's hand, I found that the appearance of the hands was striking, the dorsal surfaces being covered by a diffuse, reddish-blue, indurated, brawny erythema, and the palms exhibiting the same condition, only in lesser degree, and accompanied by thick, gray exfoliation. On the face it was observed that numerous brownish, atrophic spots appeared here and there, as raised areas upon the surface, and upon the tip of the left elbow over the olecranon process, was an oval patch about one and one-half inches in length, and one and one-fourth inches in diameter, of the same character. Upon the dorsal surfaces of the feet, at the bases of the toes, were also brawny, bluish red, erythematous areas with some exfoliation. The gums and mucous membranes of the buccal cavity were a dark bluish red, showing marked engorgement, and some ulceration. For the past week or ten days, the patient has been suffering from a watery diarrhea, which had been obstinate to treatment.

Physical examination—Examination of nervous system, revealed no difficulty with the cranial nerves. The pupils were prompt to light, distance and consensuality. The eye back grounds were normal and above the shoulders no neurological abnormalities could be determined. The tendon reflexes of the upper extremities were normal, as was the sensibility, with the exception that there was slight ataxia of the left arm manifested, in an attempt to perform the finger-to-nose, and finger-to-finger tests. In the lower extremities it was noticed that the patellar reflexes, and Achilles reflexes were greatly exaggerated, and a double Babinski was present. On separating the thighs, a marked resistance and spasticity could be elicited. The lower extremities were also somewhat ataxic, but there was no other change in sensibility.

Blood-pressure—110 systolic, and 70 diastolic.

Heart and lungs, negative. Wassermann tests completely negative, as were the specimens of urine, examined. The blood count revealed 3,000,000 reds, 10,000 leucocytes, and 75 per cent. hemoglobin.

Mental examination—In investigating the patient's mental state, little of interest could be obtained from her, with the exception that she was very irritable, fault-finding, and hypersensitive. Considerable resentment was displayed when she thought that undue interest was being taken in the scientific side of her case, rather than in the physical. According to the nurse in charge, she suffered nightly, from a marked confusional state, of the delirium type, during which she muttered and talked at random. The circumstances which had happened the day before, were readily forgotten, but her memory for past events was good. Owing to her illness and mental pre-occupation, she took very little interest in her immediate surroundings.

As will be readily observed, this case presents all of the essential, diagnostic factors of pellagra. A history of mental deterioration, extending over a period of five years—the presence, early in the disease, of a brawny, reddish-blue erythema on the backs of the hands, clearing up as the weather becomes cooler in the fall, the constant presence of the mental disturbance, with occasional slight recurrences of the erythema upon the hands, later on, a development of gastrointestinal symptoms, stomatitis, and posterolateral cord involvement, complete the clinical ensemble.

Although pellagra is a disease very well known in the south, and readily recognized by the majority of practitioners, it is even yet, in the Middle West, and in Iowa especially, thought to be so uncommon, that it is very apt to be overlooked, and it is for this reason, that I have deemed it advisable to report the two cases, the histories of which, have just been rehearsed.

If the general practitioner will bear in mind the symptoms which are characteristic of this difficulty, there will probably be little trouble in making a diagnosis. Whenever is found, a disease which has mental, buccal, gastro-intestinal, and spinal cord symptoms, together with an erythematous eruption on the backs of the hands, and this sickness extends over a period of years, with occasional remissions, and recurrences of erythema, a diagnosis should be very readily arrived at.

THE IMPORTANCE OF SANITATION IN THE ZONE IMMEDIATELY SUR- ROUNDING THE CITY

F. A. STEELSMITH, M.D.

This is the real key to the sanitation problem of any city, since in reality the zone contingent

to the city is a very important part of the city from a sanitary viewpoint.

The extra-cantonment zones established by the government about the various training camps and the results obtained therefrom, is indicative of the need of such zones being established about all urban places.

Under our Alabama law (Section 1230—Police Jurisdiction, Territorial), cities of six thousand or more inhabitants have police jurisdiction covering all adjoining territory within three miles of the incorporate limits; and cities with less than 6,000 inhabitants have such jurisdiction covering all territory adjoining the incorporate limits to a distance of one and one-half miles.

This gives us all the lawful power we need, as it gives the local city officials the right to enforce any sanitary law or ordinance they may deem wise and proper to adopt.

In the establishment of such zone about a city, since "charity begins at home," the first procedure is to properly work up the popular support of your own people to such an extent that you may have their cooperation in the adoption of the proper laws or ordinances regarding or bearing upon sanitation.

These regulations should stipulate very plainly the control of three principal subjects, viz: garbage disposal, refuse disposal and excreta disposal. The latter must prohibit the use of any other than a well defined and well described sanitary closet or privy excepting all residences that are located within a certain distance from sewers, but cause these that are not connected, and within a certain limit, to be connected with said sewers.

The next phase of the question presenting itself, is, by whom shall the sanitary ordinances be enforced?

All city ordinances are enforced by the executive department, and this should most certainly fall to the ordinary executive department.

The public health official should by all means remain on the job and act as advisor, but the inspector should be a uniformed policeman, and if the person or persons violating the sanitary ordinance be haled into the police court, the fine need not be taken into account.

Right here allow me to emphasize the importance of a real, live, up-to-the-minute chief of police. If necessary, assign yourself the task of educating this man in a sanitary way—make him see the benefits to be derived from sanitation, and he will see to it that the ordinances will be enforced.

Will not take up the questions of garbage and refuse disposal, as they may be handled by any

well ordained system, the cost of which is not great in the ordinary city.

As to the sanitary privy, with the pail or can system, we may have more to say.

The benefits we may expect to derive from the proper sanitation of the zone immediately surrounding a city may be classified into five groups:

First—Better control of communicable diseases.

Second—More hygienic living.

Third—The fly almost annihilated.

Fourth—The production of anopheles lessened—therefore less malaria.

Fifth—The city a much better place to live.

First—Control of Communicable Diseases: The U. S. Public Health Service adopted the following monogram, which is the corner-stone of the foundation of the building called Preventive Medicine. This is the monogram: "No health department, state or local, can effectively prevent or control disease without knowledge of when, where and under what conditions the cases are occurring."

If the physicians are prompt in their reporting of the occurrence of the infectious diseases, there is no reason an epidemic of damaging propensities should make itself felt in any city.

We all know that the poorer unhygienic people are prone to live in the poorer lighted, unventilated houses, and they are located near, or occasionally within the zone just outside the incorporate limits.

Here then we have the more frequent nuclei that spreads the contagion to other parts, and because of their location the disease may gain such proportions that the health department of the city cannot cope with the epidemic until much damage has been done.

You that have had experience in isolation and quarantine know these people just mentioned are the hardest to control, but with the proper assistance of the police department, great benefits are possible in the control of the communicable diseases that very frequently appear first in the extra-city zone.

Second—More Hygienic Living: Even many of the poorer classes are glad to assist the city in clearing away all rubbish when, if left to their own initiative it will never be cleared away.

In clearing away the rubbish and refuse you at once do a great deal toward making things unpleasant for the fly and his propagation, and we also create quite a stimulus to many housewives in helping them to keep their homes more cleanly and hygienic.

Third—The Fly Most Annihilated: In the fly-tight sanitary closet we not only dispose of

the human excreta, but we prohibit the breeding of flies and the only way to prevent the spread of diseases by the fly is to "prevent the fly."

We have evidence that goes to show the fly plays a very important part in the spread of disease. Among the list of diseases of which there is more or less evidence that the infection may be conveyed by the fly, are: typhoid fever, cholera, dysentery, (A. and B.), diarrhoea of infants, anthrax, erysipelas, ophthalmia, diphtheria, smallpox, plague, poliomyelitis, sleeping sickness, relapsing fever.

The fly has been known to travel a distance of one and two miles at a flight, and they have been observed on cribs as far as six or seven miles out on Lake Erie, supposed to be carried there by winds.

The proper collection of the garbage and refuse and the installation of sanitary privies in the zone immediately surrounding the city almost, if not entirely, obliterates the breeding places of the fly, and does much to promote health in the entire city. Would recommend the sanitary privy, built fly-tight, using pail or can for the reception of excreta.

One man, equipped with the proper wagon, can well care for 400 of this type of privy, provided the maximum haul is not more than four miles from the dumping station. These cans are emptied at least once each week during the winter months, and oftener during the summer months.

At Tuscaloosa, within the city limits and in the extra-sanitary zone, we have approximately 1,400 sanitary closets, and three men with especially constructed wagons attend to the removing and the return of the cans. These pails or cans should be owned by the city.

The cost of this service can be maintained at the present time for about twenty-five to thirty-five cents per month per family.

Something should be said regarding the dumping station:

This or these should be located upon one or more of the main sewers, and should be as well isolated as possible, being located as near the outlet of the sewer as possible to be convenient. This location is generally less inhabited than others, and it gives the sewer a better chance to handle the amount fed it.

A bountiful water supply is necessary at this disposal plant, in order to properly wash and flush the cans after being emptied, and before the return of same to the respective closets.

Some diluted deodorant may be placed in each can after the cleansing process, as it lends some aid to the populace for anesthetic purposes. It

might be well to state that it will take one man at the dumping station to empty and thoroughly flush and clean the cans.

Fourth—The Production of Anopholes Lessened, and the Accompanying Reduction in the Malarial Index: Much could be said regarding the malarial situation in Alabama and the methods of drainage that might be applied that would give us a two-fold benefit; first—more production of foodstuffs; second—at the same time do away with the haunts of the mosquito.

I am a firm believer in underground or closed drainage.

Given a small swamp, or marsh or pond near the city—by draining same by open ditches we find these ditches must be continually looked after to remove all obstacles that may retard the free flow of water.

Some may say that the example set by the government in "open ditching" their camps, signifies that to be the best procedure; for temporary drainage—yes; for permanent drainage—no.

In the extra-city zone we should establish permanent drainage. Open drainage, to be effective, should be oiled frequently or incessantly through the mosquito season.

To the open drainage system we have small puddles of water standing near the ditch that are wonderfully productive of mosquitoes, while in the closed tile drainage these puddles very rapidly disappear.

The closed clay tile drainage obviates all these difficulties—after completion they need no further attention.

Since the cost of the closed drain is about double the cost of the open drain, we may figure in the deal the reclaimed ground, (which will be the most productive in the neighborhood) at a nominal price and we find that the covered drain is as cheap if not cheaper, for a term of years, than the open system.

In my native state, Iowa, we have had considerable malaria, but after the land reclamation projects started and our swamps and marshes were drained, our malaria at once disappeared.

Fifth—Makes the City and Surroundings a Better Place to Live: One of the best advertisements a city may have is to point with pride to their health statistics. One of the first things of which a city is questioned by men about to locate any manufacturing plant is in regard to health conditions. When a man wants to put in some line of mercantile products, and wishes to live within the city, he investigates the health conditions.

Taken all in all, the greatest asset a city has

to offer, and the greatest asset the private men may have, is health.

A well sanitated city, with the zone immediately surrounding the city well sanitated, makes the city a better place to live in.

The following will give some idea of the benefits derived by the sanitation of the extra-zone surrounding Tuscaloosa.

The sanitary ordinances were adopted in August, 1916, to apply to the extra-zone of three miles from the incorporate limits.

Our records show that we had ninety-six cases of typhoid in the city of Tuscaloosa during the year of 1915. A morbidity rate of nine per thousand. The number of cases in Tuscaloosa, including the extra-zone, during the year of 1917, one year after the completion of the installation of the sanitary closets, was twenty.

This gives us the morbidity rate of 1.3 per thousand, including the extra-zone.

Upon finer analysis we found that within the City of Tuscaloosa we had nine cases in the year of 1917, as compared with ninety-six cases in the year of 1915. Of these nine cases we had but three that were not traceable to some infection outside the city. Therefore, by strict comparison we may be able to deduct the following:

The morbidity rate for Tuscaloosa for typhoid during the year of 1915 was 9.1 per thousand, or ninety-one per ten thousand, while during the year of 1917 it was .3 per thousand, or three per ten thousand.

The U. S. general death rate as compared with the morbidity rate in typhoid fever is about one to eight or ten. The comparable statistics of the years of 1915 and 1917 quite closely conform to this proportion.

In 1915 Tuscaloosa had fourteen deaths from typhoid: this number multiplied by eight gives us a total of 112 cases. We find upon the records that ninety-six cases were recorded for that year.

In 1917 Tuscaloosa had no deaths from typhoid. We find but three cases originating within the city and but nine cases reported in the city. These figures are given to show the absence of fallacy in the compiling of the statistics.

According to the Mills-Reinke phenomena, the accompanying reduction of all other diseases, other than typhoid, should not be lost sight of, in considering the end results in extra-city zone sanitation.

Of course, in reducing the typhoid morbidity we must include the water purification, as well as the proper disposal of excreta. Allen Hazen, of New York, even specifies that when we reduce the specific death rate from typhoid in the

community one point, the total death rate of the community is reduced probably two or three points.

This may be due to the increased vital resistance resulting from the use of purer water, or to an exclusion of the disease germs, or perhaps the Mills-Reinke phenomena might be due to a combination of these two factors.

FRACTURE OF THE HYOID BONE*

W. W. PEARSON, M.D., F.A.C.S., Des Moines

An experience in March of last year, directed my attention to this subject.

A gentleman about sixty-four years of age was brought to my office on Tuesday with the following history.

The previous Friday evening at the dinner table, while eating meat, he was seized with a choking spell. His impression was that a piece of bone lodged in his throat when he attempted to swallow. From that time up until the time that I saw him, from Friday until Tuesday, he had practically nothing to eat nor drink. His complaint was inability to swallow on account of the attending pain, and the closed passage-way to the stomach.

He was tall, thin, and of a type which admits of an easy examination. There was no respiratory difficulty. When placed on the table and the suspension apparatus employed, the oesophagoscope was introduced without difficulty into his stomach. A direct view of the respiratory tract to the bifurcation of the trachea was had, simply because of the position secured by means of the suspension. For a moment the complaint and the findings were confusing. A glance however at the neck, in the region of the hyoid bone showed a lack of symmetry which at once attracted my attention. The x-ray picture taken showed a fracture of the left greater wing of the hyoid bone.

The character of the voice was weak when the patient was first examined.

With the application of adhesive straps, and the assurance that there was no foreign body in the throat, the patient returned home.

ABSTRACTS OF HYOID BONE

Gray's Anatomy—Descriptive and Surgical.

The hyoid bone receives its name from its resemblance to the Greek letter "upsilon." It is

also called the lingual bone, because it supports the tongue and gives attachment to its numerous muscles. It is a bony arch consisting of five segments, a body, two greater cornua, and two lesser cornua. It is suspended from the tip of the styloid processes of the temporal bones by ligamentous bands, the stylo-hyoid ligaments.

The Body—The body is the central part of the bone and is quadrilateral in shape. Its anterior surface is convex, directed forward and upward, it is divided into two parts by a vertical ridge, which descends along the median line and is crossed at right angles by a horizontal ridge, so that this surface is divided into four muscular depressions. At the point of meeting of these two lines is an elevation, the tubercle.

The portion above the horizontal ridge is directed upward and is sometimes described as the superior border. The anterior surface gives attachment to the genio-hyoid in the greater part of its extent; above to the genio-hyo-glossus; below to the mylo-hyoid, stylo-hyoid, and aponeurosis of the digastric (suprahyoid aponeurosis); and between these to part of the hyo-glossus.

The posterior surface is smooth, concave, directed backward and downward, and separated from the epiglottis by the thyro-hyoid membrane and by a quantity of loose areolar tissue.

The superior border is rounded and gives attachment to the thyro-hyoid membrane and part of the genio-hyo-glossi muscles.

The inferior border gives attachment, in front to the sterno-hyoid; behind to part of the thyro-hyoid; and to the omo-hyoid at its junction with the great cornua.

The lateral surfaces are small, oval, convex facets, covered with cartilage for articulation with the greater cornua.

The greater cornua (thyro-hyals) project backward from the lateral surfaces of the body, are flattened from above downward, diminish in size from before backward, and terminate posteriorly in a tubercle for the attachment of the thyro-hyoid muscle.

The lesser cornua (cerato cornua) are two small conical shaped eminences attached by their bases to the angles of junction between the body and greater cornua, and giving attachment by their apices to the stylo-hyoid ligaments. In youth the greater cornua are connected to the body by cartilaginous surfaces and held together by ligaments; in middle life they usually become joined to the smaller cornua, are connected to the body of the bone by a distinct, diarthrodial joint, which usually persists throughout life, but occasionally becomes ankylosed.

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 9, 10, 11, 1918, Section Ophthalmology, Otology and Laryngology.

FRACTURE AND DISLOCATION OF THE HYOID BONE

From Practical Surgery. Walsham, page 338.

A fracture may be produced by any violence applied to the neck.

Symptoms—Pain, increased upon movement of the head or tongue; dysphagia; hoarseness; suffocation on protruding the tongue; mobility of the fragments and crepitus; coughing and dyspnoea.

Treatment—The fragments should be replaced by the finger passed through the mouth, whilst the fingers of the other hand manipulate the bone externally, a gag and chloroform being necessary. The parts should then be kept quiet, and the patient fed on slops passed well to the back of the tongue.

What has been described as dislocation of the hyoid bone appears rather to be a condition of the parts due to relaxation of the ligaments attaching the thyroid cartilage to the hyoid bone.

From American Practice of Surgery. Bryant and Buck, vol. iii, page 107. Duncan Eve, M.D., Nashville, Tenn.

The hyoid bone is rarely broken, except by judicial or suicidal hanging, by throttling, and by falls. Fracture of the hyoid bone has caused death.

Symptoms—Sharp pain at site of bone on swallowing, talking, or on slight pressure. Swelling which soon follows injury and is due to extravasation of blood, recognizable mobility of the fragments and some deformity; hemorrhage from the mouth if the fracture is internally compound; inability of the patient to move the tongue without pain. Water taken into the mouth may cause coughing or choking.

Treatment—As complete restoration as possible of the fragments to their natural position is required. The patient should be enjoined not to talk or whisper for at least a week or more. Swallowing is objectionable. Food should be administered by way of the rectum, or by means of an œsophageal tube. The head should be kept immobile. This is done by divers means. A broad collar of cotton flannel covered with plaster of Paris, or one of sole leather that has been softened by immersing in water can be used. Union of the fragments occurs in about four weeks.

A few rare cases of chondroma of the hyoid bone have been reported.

FRACTURE OF THE GREATER CORNUA OF THE HYOID BONE RESULTING FROM MUSCULAR ACTION

From the Journal of the A. M. A. May 26, 1916. Ashe, H. P., M.D., Pittsburg, Penn.

Fractures of the hyoid bone due to muscular action are rare. Stimson, in his Practical Treat-

ise on Fractures and Dislocations mentions only two, out of forty-five hyoid fractures collected by Malgaigne, Hamilton, Gibb, Gurlt, and himself.

The following case of fracture of the left greater cornu of the hyoid bone, having resulted from muscular action is cited by Dr. Ashe.

"A domestic by occupation called upon me complaining of pain and swelling in the neck, and particularly of change of voice, the occasional absence of which so alarmed her that she sought medical aid. The week previous to her visit while arranging portieres, she inclined the head forcibly backward, and at the time felt and heard, as she expressed it, something break in her neck."

Swelling of the neck anteriorly, localized pain in the neck produced by motions of the head or tongue, bloody sputum, deglutition embarrassed by frequent choking, and alteration of the voice variously muffled, hoarse, or absent, were the symptoms early manifested. Cough and dyspnea were not experienced.

The patient was strong and well developed, with an uneventful medical history, excepting tonsillectomy and appendectomy a few years previous, since which she had been perfectly well.

A well defined swelling, without ecchymosis, occupied the anterior and anterolateral cervicle regions, beginning sharply at the superior border of the hyoid bone, and continuing into and traversing the submental region as far as the inferior border of the inferior maxillary bone.

Emphysema was not present.

The hyoid bone was well outlined on palpitation, disclosing no perceptible irregularity, save a slight inward deviation of the left greater cornua.

Pain and tenderness were elicited when pressure was made at a point on the bone near the juncture of its left greater cornu with its body. A little to the left of this point was a slightly enlarged, tender submaxillary lymphatic gland.

Since union takes place promptly in hyoid fractures and it had been one week since the accident, crepitus and preternatural mobility were not present.

The contours and external surfaces of the thyroid and cricoid cartilages both could be freely manipulated without pain or discomfort. Treatment was expectant. The patient was ordered not to use the voice, and to secure approximate immobility of the head and neck by means of wearing a high stiff collar.

"The fact that this patient prior to calling upon professional aid was treating the external swelling with liniments for a week, renders it thoroughly probable that fractures of the greater

cornu of the hyoid bone sequential to muscular action are more frequent than shown by the literature; and warrants the belief that cases presenting as many symptoms as the one just narrated, not to mention cases manifesting more vague and fewer symptoms, occur and run their course without recourse to the physician or surgeon."

SUBLUXATION OF THE MAJOR CORNU OF THE HYOID BONE—(DYSPHAGIA VALSALVIANA)

Hazelhurst, Franklin, M.D., Asst. in Laryngology and Rhinology, The Johns Hopkins University.

Few cases of subluxation of the major cornu of the hyoid bone are reported because of the rarity of the trouble or the infrequent diagnosis of the condition.

Dr. Hazelhurst cites a number of cases in comparison with his own that he looked up in literature as an aid to his own.

Dr. Hazelhurst's patient was a doctor. He said that when he was seven years of age he became suddenly unable to swallow. He was taken immediately to a physician who tried in vain to get something into place that had apparently become twisted in his neck. After two days, during which time he stayed with the physician there was a sudden restoration of the normal condition. Repeatedly after this he had similar attacks in which swallowing became at first painful and then impossible. Sometimes the condition became relieved of itself as in the first attack, and sometimes he obtained relief by pulling hard on the skin in front of the sterno-mastoid-muscle. By the time that he was twenty-three years of age he had learned to "set it" by inserting the index finger into the mouth at the side and base of the tongue at a point which corresponded on the outside to the attachment of the major cornu of the hyoid bone to the superior cornu of the thyroid cartilage, and press outward and forward.

A click accompanied this "setting." There was no change noted in the larynx. In this case there was probably a loose articulation of the major cornu with the body of the hyoid bone, or a loose attachment of the tip of the major cornu to the superior horn of the thyroid, allowing greater freedom of movement of the major cornu than is normally present.

Oliver D'Angers, in 1837, tells of four cases of the above condition which he collected from literature and which Dr. Hazelhurst cites in his article.

1. The first case he gives was cited by Valsalva. Dysphagia followed the ingestion of a hard and voluminous body, a piece of meat, which he attributed to the dislocation of the cartilaginous appendices of the hyoid bone. The dislocation

was reduced by Valsalva pressing with his fingers at the back of the mouth. The condition was named by Sauvage, *dysphagia valsalviana*.

2. D'Anger's second case was reported by P. B. Molinelli in 1767. A young student of slight build was grasped violently by the throat and choked. Pressure was made on the right external part of the neck because it was impossible at once for him to swallow; in a state of great anxiety and covered with a cold sweat he sent for Molinelli, who reached him an hour after the occurrence. His pulse was small, and he seemed in danger of imminent dissolution. His articulation and respiration were little altered. No deformity was noted in the region of the larynx. There was however a tumor formed between the larynx and the right sterno mastoid, which was very painful.

Molinelli treated his patient by placing his right index finger between the right tonsil and the base of the tongue, at the same time applying the index and middle fingers of his left hand to the outer side of the neck in the region occupied by the hyoid bone. With the fingers in the back of the mouth, the right greater cornu of the hyoid bone was pushed gradually outward, while the fingers placed at the outside of the neck limited and directed this pressure. Immediate relief followed and the prominence disappeared.

3. The next case was also reported by Molinelli. The patient was a man fifty-two years of age. The subluxation to the greater cornu of the hyoid bone was due to a blow he received in the neck by a man who threw a brick at him. It struck the right anterior and superior part of the neck. The man experienced great difficulty in swallowing and great anxiety. Three hours after the blow was struck Molinelli employed successfully the same means as in the case above. The symptoms were less intense in this case and no prominence was observed.

4. This case was reported by Dr. Mugna in 1878. The patient was a sexagenarian of tender and weakened body, who swallowed a piece of meat tendon. He had a sensation as though the oesophagus was blocked and was unable to swallow. He experienced great anxiety. The respiration and voice were free, and there was no change in the form or appearance of the throat or exterior of the neck.

Dr. Mugna introduced the index and the middle fingers of the right hand into the back of the patient's mouth and imparted to the hyoid bone some displacing movements, keeping the left hand in front of the neck and on the hyoid bone. The painful condition disappeared at once and the patient was able to swallow.

Dislocations of the hyoid bone occur in two ways, according to D'Anger. One occurs from pressure on the outside, and one from pressure from within. The first corresponds to the dislocation caused by choking, as in Molinelli's first case, and the second is due to dislocation by swallowing a large body, as in Valsalva's case.

Several other similar cases were cited by Hazelhurst. Of them comparisons were made of their similarities and their differences. Of the eleven cases cited, the symptoms vary somewhat as to severity, but the resemblance is so striking that the assumption seems warranted that the underlying cause is the same in each case. This is most probably a dislocation of varying grade of the major cornu of the hyoid bone in the direction outward or inward and downward. Either type result from trauma or sudden movements of the head, neck, or jaws.

The age of patients varies from seven years to over sixty.

In six of the eleven cases dislocation took place repeatedly. In four there is mentioned a definite "click" as the dislocation was reduced. A prominence in the side of the neck between the inferior ramus of the jaw and the sterno mastoid muscle was noted in four cases. There was marked dyspnoea in two cases. Local tuberculosis of the thyro-hyoid articulation of the larynx was present in two cases. Laryngoscopically no change from the normal was noted in any of the cases. Three of the cases occurred in physicians.

Subjectively the patients experienced pain in swallowing in six cases; marked anxiety in four cases; a feeling as though a foreign body were blocking the oesophagus in three cases. In all cases there was immediate relief on the reduction of the dislocation. Four cases came on during the sudden movements of the head and jaws, yawning, coughing, singing, etc. Four as the result of direct trauma from without by choking, or from within through the ingestion of a large solid particle. There was surprising similarity in the methods of reduction used successfully in each case.

FRACTURE OF THE HYOID BONE

From an American Text-Book of Surgery, page 294.

Cases of fracture of the hyoid bone are very rare. In the cases recorded it has occurred as the result of direct violence and has involved one of the greater cornua.

Symptoms—Sharp pain, swelling, marked dysphagia, and sometimes bleeding from the mouth due to perforation of the mucous membrane by fragments.

Death from edema of the glottis may occur.

DEFINITION OF THE HYOID BONE

From the American Illustrated Dictionary, Dorland.

The hyoid bone is a horse shoe shaped bone situated at the base of the tongue just above the thyroid cartilage. It consists of a body, from each side of which two processes, the greater and lesser cornua, project backwards.

FRACTURES AND DISLOCATION OF THE HYOID BONE.

From the Reference Handbook of the Medical Sciences, vol. iv.

Of the few cases there are on record of fracture of the hyoid bone, three were produced by hanging; three by the throat having been seized between the thumb and fingers, three by direct blows or falls upon the front of the neck; and one by muscular action alone.

In those cases caused by hanging the body of the bone was broken. In the others the fracture involved one of the greater cornua and occurred at the juncture of the cornua with the body. Crepitus is generally absent.

In two of the recorded cases the adjacent mucous membrane of the pharynx was ruptured.

Symptoms—Sudden sensation as if bone broken; bleeding from fauces; difficulty in opening mouth; in some cases dysphagia and aphonia; pain in movements of tongue with usually more or less swelling about neck and ecchymosis; later cough, expectoration and hoarseness. The circumstances which indicate with certainty the nature of the accident are unnatural mobility of the fragments, with or without crepitus, and an angular inward projection which may generally be felt in a careful examination of the pharynx. It is dangerous only in view of its possible complications. Of three cases in which a fracture resulted from direct blow, only one survived. Of three resulting from lateral pressure upon the cornua all recovered.

The amount of difficulty in replacing the fragments of bone will depend largely upon the extent of displacement and the consequent laceration of the neighboring tissues. An attempt should be made to accomplish replacement by introducing one finger into the mouth, while the opposite hand supports the fragments from without. From the nature of the parts, any attempt at the application of a splint or support will be useless. Rest to the parts, together with general measures to allay inflammation, will generally constitute the available treatment.

Luxation of the hyoid bone is a rare accident. The principle symptoms have been pain at the seat of the injury and difficulty in swallowing. In a case observed by Daly (Archives of Laryngology vol. i, page 162) luxation of the left cornu had been of frequent occurrence caused

usually by laughing or yawning. A laryngoscopic examination showed no internal lesion. Reduction was affected by grasping the throat firmly with the thumb and index finger of one hand, steadying the head with the other hand, and then directing the patient to swallow vigorously, while at the same moment the parts were compressed between the thumb and finger, and then quickly released again. After the third effort the patient suddenly declared he was relieved, and to prove it moved his head rapidly in all directions with ease and comfort, and drank a glass of water.

FRACTURE OF THE HYOID BONE

From Modern Surgery. De Costa seventh edition.

Fractures of the hyoid bone are uncommon injuries, and are caused by hanging, throttling, and falls in which the neck strikes some obstacle. If the bone breaks by throttling it is its body which fractures (indirect force). Fractures by muscular action are most unusual.

Symptoms—Sensation of something breaking; bleeding from the mouth if the mucous membrane is lacerated; pain, which is worse on opening the jaws or moving the head or tongue; difficulty in swallowing, muffled hoarse voice, or aphonia; swelling and frequently ecchymosis of the neck; harsh cough and dyspnea occasionally. Always look into the mouth and see if there can be detected ecchymosis or laceration of the mucous membrane or projection of a bony fragment. The displacement is produced by contraction of the middle constrictor of the pharynx. A fracture of the hyoid bone may destroy life.

Treatment—For dysphagia, be ready to perform intubation or tracheotomy at a moment's notice. Edema of the glottis is a great danger. Try to restore the fragments with one hand externally and with a finger of the other hand in the mouth. Put the patient to bed and have him lie back upon a firm rest so that his shoulders are elevated. His head should be placed between extension and flexion, a pasteboard splint or collar moulded on the neck, and a bandage applied around the forehead, neck and shoulders to keep the head immobile. The patient must not utter a word for a week. He must at first be fed by enemata, and then for sometime on a liquid diet which is given through a tube early in the case. Endeavor to control the cough by opiates. It takes about four weeks for a fracture of the hyoid bone to unite.

From Keen's Surgery, vol. ii.

Fractures of the hyoid bone are rare, and are due to direct violence. The most frequent seat of the fracture is in one of the greater cornua,

at or near its juncture with the body. There is considerable displacement of the fragments, the pharynx often being punctured.

The characteristic symptoms are: sharp pain over the bone when the mouth is open or the tongue protruded; great difficulty in swallowing; swelling and ecchymosis appears over the hyoid bone, considerable dyspnea is usually present; difficulty in speaking, hoarseness, cough. If the mucous membrane has been perforated a profuse hemorrhage may occur. In a few cases abnormal mobility of the cornua has been found by grasping the hyoid between the fingers of both hands. The prognosis is often quite grave on account of the accompanying injuries.

The fracture can be reduced by inserting one finger into the mouth and placing the other hand over the bone upon the outside of the neck. The patient should be kept very quiet, an ice bag placed over the hyoid bone and food given per rectum for the first few days.

HYOID BONE

Surgical Anatomy, Deaver.

The hyoid bone is an important adjunct to the larynx. It prevents collapse of the pharynx over the superior aperture of the larynx, and from it the larynx is suspended by the thyro-hyoid membrane and the thyro-hyoid ligaments. The greater cornua of this bone are important guides. The tip of the greater cornua is opposite the origin of the lingual artery, just above the level of that of the superior thyroid artery, and just below the level of the origin of the facial artery. In the operation for ligation of the lingual artery in the lingual triangle the incision is made just above and parallel to the greater cornu of the hyoid bone. This bone is sometimes fractured by external violence, as in choking or throttling and has been broken by muscular action. The body of the bone is rarely fractured, but one of the greater cornua is usually fractured.

The hyoid bone directly behind the lower border of the chin may be felt in its entirety through the skin. To its upper border are attached the base of the tongue, and the genio-hyoid and mylo-hyoid muscles, which form the floor of the mouth. Below the body of the bone are the thyro-hyoid space and membrane, the center of which corresponds to the position of the epiglottis. The greater cornu of the bone is the landmark which locates the origin of the superior thyroid, lingual and facial arteries. The origin of the superior thyroid artery is just below the level of the greater cornu of the hyoid bone, that of the lingual artery is opposite to the greater cornu, and that of the facial artery is just above.

FORMATION OF THE VISCERAL SKELETON OF THE HEAD; CARTILAGINOUS BARS OF THE VISCERAL ARCHES

Quain's Anatomy, vol. i part i "Embryology."

A cartilaginous bar extends from the periotic capsule and basis cranii within each of the first three visceral arches, and passes forward to meet its fellow in the middle line. The bar of the mandibular arch is known as Meckel's cartilage. It is visible in all sections of the foetal jaw up to the seventh month. Its proximal end is attached at first to the basis cranii, afterwards to the periotic capsule, its distal end joins that of its fellow in the middle line of the lower jaw. Only near this does Meckel's cartilage take part in the formation of the lower jaw bone, the greater part of this bone being developed by ossification at several places in the connective tissue around the cartilage.

The second or hyoid bar arises from the skull close behind the attachment of Meckel's cartilage, and passes along the second arch. It disappears in part but in part is converted into the styloid process, stylo-hyoid ligaments, and lesser cornua of the hyoid bone. The body of the hyoid bone (vasa-hyal) is an intermediate formation between the second and third arches. The bar of the third arch is known as the thyro-hyoid. Its lower end forms the greater cornua of the hyoid bone, but its attachment to the skull early disappears, or in some animals may not be found at all. This bar is in all cases of less importance than the first two, from the proximal parts of which important structures connected in lower vertebrates with the suspensory apparatus of the lower jaw, in the higher vertebrates with the apparatus for sound transmission to the internal ear are developed.

HYOID BONE

Holden's Anatomy.

This bone named from its resemblance to the Greek Upsilon is situated between the larynx and the tongue, and serves for the attachment of the muscles of the tongue. It may be felt immediately below and one and one-half inches behind the symphysis of the jaw. It is arched in shape and consists of a body, two greater and two lesser cornua. The body is the thick central portion. Its anterior surface is convex and has a median vertical ridge, on each side of which are depressions for the attachments of muscles. Its posterior surface is smooth and deeply concave, and corresponds to the epiglottis. The greater cornua (thyro-hyals), right and left, project backward for about an inch and a half, with a slight inclination upward, and terminate in blunt ends

tipped with cartilage. In young subjects they are connected to the body of the bone by fibro-cartilage.

This in process of years becomes ossified. The lesser cornua (cerato-hyals) are connected, one on each side, to the point of junction between the body and the greater cornua by means of a little joint lined with synovial membrane, which admits of free motion. They are the size of barley corn, and give attachment to the stylo-hyoid ligaments. The os hyoides is connected with the thyroid cartilage by several ligaments which contain a quantity of elastic tissue. There is: first, the thyro-hyoid membrane, a broad fibrous membrane, which proceeds from the superior border of the thyroid cartilage to the upper and posterior part of the hyoid bone, in front of this membrane there is a bursa of which the use is to facilitate the play of the thyroid cartilage behind the os hyoides. The central portion is stronger than the lateral and is called the anterior thyro-hyoid ligament; through the lateral part of this membrane the superior laryngeal nerve and artery enter the larynx; second, the right and left lateral thyro-hyoid ligaments extend between the extremities of the greater cornua of the os hyoides and the ascending cornua of the thyroid cartilage. They contain a small nodule of cartilage (cartilage triticea).

THE HYOID BONE OSSIFICATION

From Human Anatomy, Morris.

During the early months of uterine life the hyoid bone is composed of hyaline cartilage and is directly continuous with the styloid processes of the temporal bones. Ossification takes place from six centers, of which two appear in the central piece of cartilage, one on either side of the middle line during the last months of foetal life; soon after their appearance however they coalesce to form the body of the bone (basi-hyal). The center for each of the great cornua (thyro-hyals) appears just before the time of birth, and for each of the small cornua (cerato-hyals) in the second year after birth. The great cornua and the body unite in middle life, the small cornua rarely ankylose with the body and only in advanced age.

The cartilage which joins the small cornua of the hyoid with the styloid process in early embryonic life, eventually becomes converted into the stylo-hyoid ligament. It is not uncommon, to find this ligament ossified in some part of its extent.

FRACTURES OF THE HYOID BONE

From System of Practical Therapeutics. Hare, vol. iii.

Fractures of the hyoid bone are rare.

Causes—Hanging, blows, choking by grasping neck by the hands, direct violence from falls, and even muscular action. The greater cornu is most frequently broken. The larynx is sometimes fractured in the same way and at the same time.

Symptoms—Pain increased by speaking, swallowing, or movements of the neck; tenderness, swelling, and sometimes crepitation; usually extreme dysphagia, and dyspnoea sometimes prominent. Hemorrhage is often present, and it is recognizable by palpation through the pharynx. There is often severe local and general reaction.

Treatment—Displacement should be connected by manipulation externally aided by a finger introduced in the pharynx. A collar or splint of leather or pasteboard should then be applied and the patient kept at rest with the head fixed. The local inflammation should be reduced, and muscular movements of the tongue and pharynx avoided. Rectal feeding should be practiced and the patients general condition watched. Dyspnoea following the injury of the larynx may call for tracheotomy or intubation of the larynx.

HYOID BONE

From System of Diseases of the Nose and Throat. Burnett, vol. ii.

The hyoid bone is horse shoe shaped and lies in the region of the neck between the tongue and larynx. It is near the surface and its outlines can be traced by the fingers upon manipulation. There is a body and two pairs of processes or horns (cornua), the greater and lesser. The greater cornua are long club shaped processes which gradually narrow and terminate in bulbous extremities. The direction of the greater horns is upward and backward from the body of the bone. The lesser horns resemble small pegs, and ascending at a right angle at their origin with the junction of the body and greater horns of the bone. The hyoid bone lies with its convexity directed forward; its concavity backward. The position and direction of the greater horns aid in maintaining the lower pharynx in a patulous condition. The function of the hyoid bone in deglutition is great.

HYOID BONE

From Practical Human Anatomy. Weisse, No. 4.

This movable "u" shaped bone is located at the anterior and superior of the neck. It is held in position by the antagonism of the muscles attached to it; inferiorly, the sterno-hyoid, omohyoid (anterior belly), and thyro-hyoid; superiorly the digastric (anterior belly) mylo-hyoid, genio-hyoid, and genio-hyo-glossua; posteriorly the digastric (posterior belly), stylo-hyoid, and middle constrictor (of the pharynx).

HYOID BONE

From Diseases of the Nose and Throat, Thompson.

The hyoid bone assists in slinging the larynx into position and shares in many of its movements. It is the first firm body met with on passing the hand below the chin, backwards and slightly downwards. It is on a level with the fourth cervical vertebra.

Injuries and Fractures—There are three or four cases of muscular action resulting in fracture, but direct violence is the usual cause of fractures of the laryngeal cartilages. They are more common in adult life, doubtless because in infancy and old age there is less exposure to accident. They are more frequent in men than women. Direct violence or direct compression may produce fracture, but concussion is not sufficient unless applied directly while at the moment either the vertebral column or the front of the neck is a fixed point. One or the other of these conditions occurs in street accidents, kicks from horses, acrobatic performances, or when a cyclist is flung forwards against the handle bars. Fracture of the larynx is rare in hanging as the cord slips upwards and only breaks off the great cornua of the hyoid.

The hyoid bone may give way in the body or the cornua. Healing occurs by fibrous union in the fractured cartilage. A portion of the cartilage may be exfoliated. In some cases whether of accidental or suicidal origin, there may be accompanying lesions of the hyoid bone, trachea, jaw, clavical, or neck.

Symptoms—Local pain, tenderness and swelling, and more or less interference with respiration, phonation, mastication, and deglutition. Hæmoptysis may occur.

Pain is elicited by movement and swallowing, and by handling the neck. Dyspnoea may be marked, and asphyxia by sudden stenosis may occur early. Asphyxial symptoms may occur later or even develop suddenly in those who appear quite convalescent.

The dyspnoea in such cases is probably produced by displacement of a piece of cartilage, or by sudden emphysema. Fracture of the thyroid cartilage is a more serious accident than when the hyoid is injured.

Treatment—Danger lies in the interference with respiration. If this is met by an early performance of tracheotomy, there is no reason why a much larger proportion of cases should not recover. Some recommend a tracheotomy in all cases.

FRACTURE OF THE HYOID BONE

From the Manual of Surgery. Rose and Corless.

Fracture of the hyoid bone is uncommon. It is caused from direct violence, such as forcible grasping or the constriction of the neck as in hanging. Either the body may be broken or one of the cornua separated.

Symptoms—Pain on attempting to move the tongue, jaw, or neck; husky voice; deformity which can sometimes be seen from without. Occasionally the mucous membrane is perforated, and bleeding into the pharynx may occur, whilst edema of the glottis may supervene. The fragments should be approximated as well as possible by manipulation between one finger in the mouth and the hand outside, and the neck then fixed by a poroplastic collar.

HYOID BONE

From Atlas and Text-book of Human Anatomy. Sebotta-McMurrich.

The hyoid bone is preformed in cartilage and arises chiefly from the second branchial arch (the hyoid arch), the greater cornua however representing the third arch. The body (two centers) and the greater cornua commence to ossify at birth, the lesser cornua at a much later period. Sometimes the lesser cornua extend far into the stylo-hyoid ligament, just as the styloid process does, the two bones having a common embryonic origin.

LIGAMENTS OF THE HYOID BONE

The greater cornua of the hyoid bone are connected with the body of the bone either by movable joints or by synchondrosis, or they are united by synostosis. The lesser cornua are frequently cartilaginous and are connected to the body by movable joints or by syndesmoses. Each lesser cornua is connected to the styloid process of the temporal bone by the stylo-hyoid ligament. A portion of the lesser cornua, or a rod of cartilage not connected with the hyoid bone sometimes extends into the styloid ligament, and in a similar manner the styloid process or a separate body spicule may extend far into the ligament. All three portions, the lesser cornua, the stylo-hyoid ligament, and the styloid process, have a common origin in the second visceral arch.

HYOID MUSCLES

The infra hyoid muscles are situated between the hyoid bone and the upper margin of the thorax, chiefly in the anterior cervical region, and represent a continuation of the rectus abdominalis into the neck, being the remains of an originally singular muscle layer which is interrupted in the

thoracic region. Some of these muscles, like the rectus, have retained indications of their original segmental, tendinous intersections. The group includes the sterno-hyoideus, the sterno-thyroideus, the thyreo-hyoideus, and the omo-hyoideus.

The infra hyoid muscles depress the hyoid bone; the sterno-thyroid draws down on the larynx, and the thyreo-hyoid approximates the hyoid bone to the larynx. They also act as accessory muscles of deglutition, and by its attachment to the sheath of the great vessels, the one hyoid facilitates the return of blood through the internal jugular vein.

CONCLUSIONS

1. Fracture of the hyoid bone is comparatively rare.

2. It may result from a blow applied direct to the hyoid, or, as in our case, result from sudden contraction of the muscles of the neck attached to this bone, in a fit of coughing.

3. The resultant collapse of the frame-work of the lower pharynx and larynx, may lead to sudden death from suffocation.

4. In a case of embarrassment of respiration, the drawing forward of the base of the tongue with a spatula, will at least relieve the collapsed condition, and permit of the proper measures to save the patient's life.

DISCUSSION OF DR. EVANS' PAPER (Continued)

Major Joseph L. Miller, M.O.R.C., Chicago—I came in a little too late to hear all of Dr. Evans' paper, so that you will excuse me if I do not discuss entirely the paper, but discuss perhaps in general the question of foreign proteid material. The relation of foreign proteid material to asthma is a very interesting one. There is little doubt that all true bronchial asthma is the result of a hypersensitiveness of the individual to some form of foreign proteid. The patient who has an attack of bronchial asthma suffers from many of the symptoms that the patient does who receives a dose of horse serum, and develops symptoms of anaphylactic asthma. There is a spasm of the bronchioles plus a hyperemia of the bronchial mucosa, leading to the symptoms of bronchial asthma. We know there are a number of foreign proteids capable of causing asthma, the first no doubt a group of bacterial proteids, as seen in people who have asthma following attacks of acute bronchitis and those who have it following focal infections in the head. Then we have asthma following polyps in the nose. In these cases the polyps probably act as a source for focal infection, or it is quite possible that the proteid in a polyp can act as a foreign proteid itself and give rise to the attack.

Then we have horse asthma, cat asthma, etc., due to the protein in the dandruff of these animals. If we can desensitize these individuals by administering protein to them so to use up the ferment in the body that is responsible for this reaction, we can cure them. It is true that these cures are usually temporary and the patient again acquires his former sensitiveness to the foreign proteid material. Is this a specific form of sensitization? In other words, can we desensitize these patients by using any form of proteid, or do we have to use a special form of proteid for each case? It appears that in the sensitization due to bacterial protein the probability is that all those can be desensitized by any form of bacterial proteid. We know that those who have treated asthma with vaccines have not treated them with the same micro-organism at all, one treated with one and another with another; this group of people can probably be desensitized no matter what form of foreign protein is used. But it looks very much as if that group which were sensitized, we will say, to the horse dandruff, are not relieved by bacterial proteids, they are apparently treated by a special protein that is made from the source to which they are sensitive. This is rather a suggestive thing. It is shown in hay fever, which is so closely related to asthma, that the results of treating people suffering from hay fever with the staphylococcus are as satisfactory as with a pollen protein. These facts would lead us to suppose that the same might be true of asthma, but with our present knowledge that does not appear to be the case. All that group where the asthma is the result of a bacterial proteid can probably be treated by any kind of bacterial vaccine, but those cases with horse asthma must be treated with horse proteins. This whole problem is intensely interesting. Another phase of foreign protein therapy is the use of a foreign protein in the treatment of acute infections. This has been referred to by Dr. Evans. This is quite a separate and distinct problem and to discuss it in detail would take altogether too much time. But, to summarize, I believe we can say this: It would look very much as if all the results that have been attained by the use of bacterial vaccines in the treatment of the various infections, were not specific in character. That is, that it is not necessary, in the treatment of bacterial infections, to use a specific vaccine. Any bacterial protein will do the work. There is so much evidence to this effect and it has accumulated so rapidly in the last few years that while it is a little too early to make the statement positive, it does certainly look as if there was nothing specific in the bacterial vaccines. It is a foreign protein, and it makes no difference whether from the typhoid bacillus or the staphylococcus or the streptococcus. Not only is that true, but it is not necessary in these cases that we use even a bacterial protein. Before the war broke out the Germans were using milk subcutaneously in the treatment of acute arthritis and other acute infections, or one can use any form of protein, and it is not even necessary to employ a protein in these cases; you can use col-

largo; metals in fine suspension, where there is no protein, will accomplish the same results. We do not know what it is that brings about the therapeutic effect. This work all originated in Krause's investigations relative to the treatment of typhoid fever. But prior to these studies it was shown by a Japanese that it was possible to terminate typhoid fever with a crisis by giving intravenous injection of typhoid fever vaccine. It was soon found that the same results could be obtained by using the colon bacillus; it was found that you could do the same thing with other proteins, with milk, with white of egg, etc. Certainly in the treatment of typhoid fever it makes no difference whatever what vaccine you use so you give it intravenously and excite violent temperature reaction. It would look as if the same principle could be applied to the other acute infections, and it certainly holds true in acute articular rheumatism. This all goes to show that the therapy is not specific in character, but that we can accomplish the same result with any form of bacterial vaccine, and to get marked result we must give the vaccine intravenously. We are never able to terminate typhoid fever by giving the vaccine subcutaneously.

Dr. Walter L. Bierring, Des Moines—I have just a few remarks to make relative to the phenomenon of anaphylaxis or hypersensitiveness. Dr. Miller spoke of the non-specificity of these various vaccines, which leads up to the few suggestions I would like to make about the work of Professor Novy who has demonstrated to us a new explanation for the phenomenon of anaphylaxis. In a series of experiments this veteran experimenter has shown that a great variety of substances—bacterial products, crude substances like agar, fibrin, and a variety of chemical substances—when introduced, under certain physical conditions, into the serum of an animal, will produce a poison, this being explained on the basis of physical chemistry as an alteration in the arrangement of the constituents or a disturbance in the equilibrium; and as this poison is induced there results a state of anaphylactic shock or hypersensitiveness similar to that which we get with the ordinary injection of vaccines, any foreign protein, etc. Dr. Novy's work shows to what degree of toxicity this can be carried on. By introducing simple substances like agar, or simply by heating the serum for a few moments, thus altering its character, he is able to produce a poison more active than any poison yet known, even in the most infinitesimal doses. And he has tried to explain the whole process of bacterial intoxication on this basis: That these infective agents are simply inducing agents, poison-forming substances, after they enter the serum. And according to the manner in which they are introduced the degree of toxicity varies. A certain degree of specificity is produced, but much of this phenomenon can be produced by a variety of substances. Using as an illustration what Major Miller just said relative to the experimental work of Gay in typhoid fever whereby the intravenous injection of specific typhoid vaccine produced a crisis, yet when Major

Miller used egg white or other simple substances he secured a similar reaction or result. That there is an element of danger in all vaccine therapy is shown by the experimental work of Novy demonstrating the large amount of poison that can be produced by the simple alteration of the serum of the body.

Dr. Parrish, Grinnell—In following this very interesting development of ideas with regard to the reaction of foreign proteins known and unknown, we should keep clearly in our minds the distinction between anaphylactic reactions and those which occur as the result of the introduction of bacterins, vaccines and serums. A fourth substance is manifest here which should engage the fertile imagination of synthetic minds. This should lead us to a more intelligent application of the already known reactions, and stimulate our ability to decipher the value and the methods of use of this latter very potent force. One other point I want to emphasize in relation to this subject is this: That we must not lose sight of the fact that the same agent will react differently in the same body, whether this body is in a certain chemical state or not. That is making use of the idea of physiological chemistry. In the treatment of certain conditions in children I have found that if I first alkalize the child I get very favorable results in infectious conditions. If I do not first alkalize the patient then I do not get favorable results in certain pathological conditions; for instance, in chorea.

Dr. Evans—I very greatly appreciate the discussions of Drs. Parrish and Bierring and Major Miller. I was led to present this subject not because I had any large amount of information to impart, but by the ever increasing wonder in my soul regarding the widely different aspects of this question. This thing originally came into my mind several years ago during the treatment of a young lady who was very badly burned. She had an extensive burn covering about 25 per cent. of the skin, a third degree burn sustained in an automobile accident, and she was ill for a very long time. During this illness she developed a suspicious sore throat, and as a matter of prophylaxis we gave her a dose of diphtheria antitoxin. Within thirty-six to forty-eight hours the change that came over this indolent non-healing area where the burn had occurred was little short of marvelous, and I have never ceased to wonder at the change even to this day, after several years. As a consequence, in several cases of this kind I have repeated this course of treatment to see how it would perform, in carbuncles, in severe burns and in delayed healing in fractures, and I am satisfied that what Major Miller and Dr. Bierring state as to the non-specificity of this thing has a large amount of truth in it. The injections of horse serum were given to these patients subcutaneously and not intravenously, there was no temperature demonstrable, but improvement resulted just the same. In regard to the treatment of typhoid fever with vaccines, we have used typhoid vaccine, given at intervals of several days, and in many of these cases I had

reason to believe that we succeeded in materially reducing the length of the disease, although the usual procedures in the treatment of typhoid fever were carried out at the same time. However, in the twelve or fourteen cases in which treatment was carried out in this manner we had a surprisingly large number of hemorrhages, more than in all the rest of my typhoid cases, and I am not sure but the use of the vaccine had something to do with the hemorrhages. In all these cases the vaccine was given subcutaneously, and over the course of several days. I wish to thank Major Miller and Dr. Bierring for their elucidation of some of the points which were brought out all too poorly in my paper.

NEW MILITARY HOSPITAL

There are 200 patients in the military hospital at Fort Des Moines, about thirty of whom have come back from duty overseas with impaired health or are recovering from serious wounds.

Their health is coming back and nearly all of them are able to take up one or more of the various courses of study offered at the Fort which takes their minds away from their own condition and also fits them better to take up civilian life again after their recovery.

The Fort Des Moines hospital has a capacity insofar as space is concerned to care for 1,159 men and is one of the larger military hospitals classed as general hospitals. However, it will require a considerably larger staff and much more equipment if the hospital fills up to capacity, as it doubtless will if the war continues.

The general hospitals are the ones to which the wounded or sick men from overseas are transferred after they have spent some time in New York hospitals or hospitals near the coast on their first arrival.

Soon after the incapacitated soldier arrives from overseas Red Cross officials are given his name, the extent of his injuries and his general physical condition. They notify his relatives telling them that they should wait until the injured man has been transferred to the hospital nearest his home before they should try to see him. After receiving treatment in the hospitals near the coast, known as embarkation and receiving hospitals, the man is sent on to the general hospital nearest his home. Fort Des Moines will thereafter serve as a general hospital for the Middle West.

Col. James K. Kenedy, recognized as one of the regular army's most distinguished medical officers, is credited as being the head of the receiving and clearing station at New York and with working out the hospital plan.

The work began a little more than a year ago in New York with an officer and two men. Now 8,354 officers, enlisted men, nurses and civilian employes are engaged in the service.

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....	Clinton, Iowa
Publication Committee	
D. S. FAIRCHILD.....	Clinton, Iowa
W. L. BIERRING.....	Des Moines, Iowa
C. P. HOWARD.....	Iowa City, Iowa
Trustees	
J. W. COKENOWER.....	Des Moines, Iowa
T. E. POWERS.....	Clarinda, Iowa
W. B. SMALL.....	Waterloo, Iowa

SUBSCRIPTION \$2.00 PER YEAR

Books for review and society notes, to Dr. D. S. Fairchild, Clinton. All applications and contracts for advertising to Dr. T. B. Throckmorton, Des Moines.

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII November 15, 1918 No. 11

SOME QUESTIONS IN RELATION TO MAL-
PRACTICE

The business of claims against doctors is subject to fluctuation and appears to vary with years and seasons. For a considerable period it seems that the practice of medicine is reasonably safe, and then comes a time when we feel that every young man should be warned against so hazardous an employment. The special danger comes to the general practitioner who assumes the risk on small fees. The surgeon in a large town is subject to damage claims for malpractice but his compensation is so much greater that he can bear the burden of the expenses and even a small judgment, without great hardship. But the doctor in a small town who finds that at the end of the year, after deducting expenses, there is but a small balance in his favor, may lose the savings of years in satisfying a judgment a sympathetic jury without much consideration, may award a plaintiff who is influenced by bad feeling or by a speculative instinct. There are certain cases in which a wholly satisfactory result is impossible, there may be some deformity, some impairment of motion in a joint or some loss of function. The patient may be uncontrollable, may fail to co-operate with the doctor, or may deliberately, without intent perhaps undo what the doctor has done and then with prejudiced evidence of the family and friends come before the court with a preponderance of testimony and secure a verdict to which he is not rightfully entitled. Then there is always a class of so-called doctors who are

willing to give unfriendly evidence either from ill feeling or from a desire to magnify his superior knowledge and skill and thus help the claimant to get before an unfriendly or prejudiced jury. The doctor himself may unwisely in a meritorious case bring trouble by harshness to a dissatisfied patient who may be led to retaliate for injured feelings. It is admitted that a patient is entitled to damages for unskillful and negligent treatment; but very few cases are based on such a state of facts. The great majority of claims rest on prejudice, or the hope of gain; to get as much of the poor doctor's savings as possible, is often the chief incentive for suits of malpractice.

It must be expected that claims for damages against doctors will continue and therefore it is important that cooperation be maintained by joining in membership relations to the great business organization of the profession, the State Medical Society. It is difficult to understand why all legally qualified physicians of the state do not become members and contribute to the welfare measures so essential to the advancement of the profession. There are of course, medical men so centered in their own business and private views, that they cannot agree to affiliate. These unfortunate men prefer to stand alone forgetting the rules that govern business of all kinds. Think of bankers, carpenters and laborers of all sorts doing such a thing simply because it might in some way deprive them of a preconceived right of absolute freedom of action. If staying out of fellowship is based on economy, it is certainly a serious mistake, and will be an unfortunate choice some time or other. We certainly feel a degree of sympathy for the man who is willing to confess to the public that he is only nominally a member of the profession he claims to belong to. The leading and influential members of the medical profession are in the local and State Society. It is not these men who need the support of their fellows as do the weaker, who constitute the great majority, who are the victims of prosecution for damages. The strong do not escape but suffer less than the weak. Not so much on account of great skill, but because of their strength and fellowship. Because of their fellowship the weak and inexperienced are made strong, and by cooperation an equality is established in the various exigencies of professional life. Why not every councillor become a missionary, preaching the doctrine of cooperation and mutual helpfulness to every reputable doctor in the state? Not far in the future we hope to see local cooperation and team work carried to the extent of leaning one on the other in all matters of professional ac-

tivity, for the purpose of contributing to better results to patients and to communities. We can see this loom up more definitely when the men trained in the military camps return to their own private practice and bring with them the methods which is making American medicine the admiration of the world.

CHANGES IN THE ARMY MEDICAL SERVICE

It is reported that Major General W. C. Gorgas after October 3rd, when he retires from active service on account of age limits, will be placed on the Supreme War Council at Versailles, as the medical representative of the United States. Major General Merritt W. Ireland, Surgeon General of American Expeditionary forces will be made Surgeon General of the Army and that Gen. Robert A. Noble, assistant to General Gorgas will succeed Gen. Ireland as Chief Surgeon overseas forces.

These changes will meet the approval of the medical profession generally. While Gen. Gorgas will be relieved of active duty his merits will be fully recognized by his appointment on the Supreme War Council. In this position the United States will continue to profit by the council of the greatest medical military commander. The English government observed practically the same rule when General Keogh reached the retiring age and was succeeded by Colonel, afterwards, General Goodwin. Gen. Ireland accompanied Gen. Pershing with the first expeditionary forces and now, returning to the United States, brings with him valuable experience from the war front. General Ireland is fifty-one years old, has served many years in the regular army in the various positions and in the Surgeon General's office under Generals O'Reilly and Torny and is fitted by training and experience for the high office of medical commander of the United States armies. General Robert A. Noble is well known as a skillful and indefatigable worker. Since the beginning of the war Gen. Noble's activities have had a wide range, as assistant to General Gorgas, and he has been associated with him in developing the most efficient medical military service the world has ever known. General Noble goes to his new field fully equipped with all the requisites that a military surgeon can possess, and the country need fear no deterioration in the foreign service. The work abroad which has received the unlimited praises and commendation of all allied commanders will go on in the same efficient manner. There has been much speculation as to the personnel of the high

medical command when General Gorgas retired from active duty and it is gratifying to know that the views held by the medical profession in private life have not been disappointed.

THE WORK OF THE COMMITTEE ON EDUCATION AND SPECIAL TRAINING

A body of students have gone out of every community under the provisions of the new draft law to become students in our universities, subject to service in the Army as they may be needed, as officers according to fitness and election.

The training is to be technical, experts as engineers, chemists and doctors. The wisdom of this law cannot be questioned, it is based on the broadest conception of fitting a group of our best young men for usefulness in our nation's service.

How many will enter the field of medicine, we do not know, but a fair proportion no doubt will find medicine attractive as it certainly will be useful in preparing doctors for the broader conception of what the practice of medicine is to be.

RAILROAD RELIEF COMMITTEE APPOINTED

Director General McAdoo has announced the appointment of the following committee on health and medical relief for the railroad administration: Dr. J. E. Dunott, chairman, and Drs. George W. Cale, Jr., St. Louis; Victor G. Heiser, New York City; Thomas R. Crowder, Chicago and Henry M. Bracken, St. Paul. The committee is charged with recommending all necessary measures to protect health of employes of the railroads under Federal control, based on a survey of conditions.

THE NEBRASKA IDEA OF SECURING MEDICAL OFFICERS FOR THE ARMY

The councilor of each district, and one member of each county society in the district, will constitute a board for the selection of the members of the profession in such district, who shall report for examination for the Medical Reserve Corps. The number to be selected will be in accordance with the number required to fill the quota of the district. Those selected in this way will be in accordance with the number required to fill the quota of the district. Those selected in this way will be designated for examination and their names will be sent by the councilor of the district to Col. J. M. Banister, U. S. Army, chairman of the State War Board. The necessary instructions will be given them by Colonel

Banister, blanks sent to them, and a date appointed for the examination of each. No one in the district will be examined except those specifically designated by the board having jurisdiction in each case.

This provision will have no bearing on members of the profession who may desire to volunteer and enter the service directly. Such physicians can always have an opportunity to enter the service as heretofore.

Col. J. M. Banister, chairman; Dr. John E. Summers, Dr. Ewing Brown, Dr. Charles L. Mullins, Dr. Joseph M. Aikin, War Committee of the Nebraska State Medical Association. The details of the proposition are that:

1. A war committee is to be constituted in each councilor district. This committee is made up of a representative elected by the physicians of each of the counties included in the councilor district. The councilor of the district is the chairman of the committee.

2. All physicians under fifty-five years of age agree each with the other that each of them fills out an application for a commission in the Medical Reserve Corps of the Army or the Medical Reserve forces of the Navy, and pledge themselves to accept the commission, if it is awarded.

3. The war committee of the council or district collects the applications and indicates the order in which the applicants are to be called.

4. The war committee of the state association files these applications for the following disposition:

(a) If the quota of physicians from the district, needed for military service, is not supplied, the applicants shall be called in sufficient numbers and in order to present themselves for examination.

(b) If the quota is provided, the applications are held until another increment is called for by the Surgeon General, when the number of applicants required to meet the new demand shall be called for examination.

STERILIZATION WATER OVERSEAS

The Hyperchloride of Calcium is used. Tubes containing one gram are issued, sufficient for one bag of twenty-six gallons. The tube is broken into an ordinance cup, moistened and made into a paste and the cup filled with water, stirred for thirty minutes and then poured into the bag. After thirty minutes more a cup full of water is drawn from the bag and tested with ten drops 10 p.c. Potass Iod and 1 p.c. soluble starch. If no color appears, the water is highly polluted and should be boiled if used. If a blue color appears when the iodine and starch solution is added the water is good and is fit for use.

COUNCIL OF NATIONAL DEFENSE

Washington, October 16, 1918.

From—Volunteer Medical Service Corps, Council of National Defense.

To—Members of State Executive Committees and County Representatives, Volunteer Medical Service Corps.

Subject—Influenza Epidemic.

1. In view of the present serious epidemic which is sweeping over the country, the Volunteer Medical Service Corps earnestly invites your attention to the following important action:

Urge upon the members of the Volunteer Medical Service Corps that they instruct families under their care to guard against the epidemic by:

Thorough cleanliness of houses, premises, clothing, utensils, and personal cleanliness.

Avoid stirring up dust.

Wash, scrub, flush, sprinkle, and use soap and water thoroughly.

Gargle and spray the nose and throat with an alkaline antiseptic fluid frequently.

Cooperate at once to the fullest extent with the local, state and national boards of health. Urge and cooperate in preparing towns and cities for the epidemic by establishing emergency hospitals in suitable buildings, by districting communities, and apportioning or dividing medical forces comprising men and women physicians and nurses so that no portion of the community is without medical care.

Circulate as thoroughly as possible and explain to the public the warning and directions printed by the United States Public Health Service and by local health authorities.

Urge the importance of fresh air and the avoidance of chill and overheat.

In fighting the epidemic give no medicine and use no treatment which may depress the vital forces, especially the heart of the patient.

2. The Army and Navy are fighting and conquering Germans. We must fight and conquer germs without taking anything away from the Army and Navy. Don't ask the Army and Navy for medical and surgical supplies. Use simple utensils for sterilizing; the simplest kinds of beds and bedding; make your own masks and dressings, and fight for yourselves.

3. While the epidemic is on, do no surgical operations unless absolutely necessary to save life.

4. In every way in your power urge the members of the Volunteer Medical Service Corps to cooperate to the fullest extent with the United States Public Health Service and with state and local health authorities.

EDWARD P. DAVIS, President.

Volunteer Medical Service Corps.

DEATHS

Dr. Charles Barr, who located in Algona in 1869, died at Los Angeles, August, 1918, at the age of eighty-two years. Dr. Barr moved from Algona in 1888. The writer had the pleasure of a personal acquaintance with Dr. Barr and often listened to his experiences in early days of practice in northern

Iowa, perhaps making a trip of three days' duration to see a single patient. If a northwest blizzard came up the only thing to do was to cover his horse with blankets, turn the sleigh over and crawl under it.

Dr. James Barr was born in Scotland in 1836 and came to America at the age of seventeen. He was a student at Upper Iowa University when the Civil War began. He joined the 12th Iowa Infantry and soon became hospital steward and later assistant to the surgeon. Two years after locating here he was united in marriage to Miss Selsina M. Bradshaw of Davenport. He died at the age of eighty-two years, leaving among others, many old time friends in Kossuth county.

Dr. Wilson graduated from Jefferson Medical College, Philadelphia, in 1873, and early in 1874 came to Independence, where he at once entered upon the practice of his profession, forming a partnership with the late Dr. J. G. House, which continued until the death of the latter in 1880. Dr. Wilson was highly successful as a physician and soon gained a reputation throughout Northeastern Iowa as a skillful surgeon. After coming to Independence he was united in marriage with Miss Julia Fonda, a daughter of the late A. H. Fonda, one of the well known business men of Independence in the early days of its history. Dr. Wilson removed with his family from Independence to Los Angeles in 1888, where they have since resided. He is survived by his wife and two daughters, Margaret and Grace.

Major William R. Ream, who was killed in an airplane accident at Effingham, Ill., recently was a physician who formerly practiced in Iowa. Major Ream was with the British American Flying Squadron detailed by the war department to tour the Middle Western states.

In 1915 Major Ream entered the Army as a lieutenant in the Medical Corps. In 1917 he was made a captain and later in the same year went to a military aviation school where he won a major's commission and was transferred to the aviation section. He was born at Homer, Nebraska, forty-two years ago. For many years he practiced medicine in Iowa and Walthill, Nebraska. In 1902 he married Harriet Flanders.

Sigurd Peter Dahl, M.D., aged thirty-three; Drake University College of Medicine, 1913; Fellow of the American Medical Association; Member of Iowa State and Winneshiek County Medical Societies, died at his home in Decorah, October 9 from pneumonia, following influenza.

Mathias Daniel Linehan, M.D., aged thirty-five; St. Louis College of Physicians and Surgeons. 1906; Member of the Iowa State and Dubuque County Medical Societies; died at his home in Dubuque, October 15 from pneumonia, following influenza.

Arnold Robert Moon, M.D., aged thirty-two; State University of Iowa College of Medicine, 1910; Fel-

low of American Medical Association; Member of Iowa State and Iowa County Medical Societies; secretary of his county medical society; died at his home in Williamsburg, October 6 from pneumonia, following influenza.

Henry Ferdinand Steinle, M.D., aged 51; Gross Medical College, Denver, 1890; Fellow of the American Medical Association; member of the Iowa State and Des Moines County Medical Societies; city physician and health officer of Burlington, died at his home in Burlington, October 15 from heart disease.

General Jackson Stone, M.D., aged thirty-four; Maryland Medical College, 1912; Member of Iowa State and Dickinson County Medical Societies; local surgeon for the Rock Island and Milwaukee Railways; died at his home in Spirit Lake, October 16, from pneumonia, following influenza.

Francis M. Yost, M.D.; aged eighty-seven, a practitioner of medicine since 1853, died at his home in Center Point, October 12.

SOCIETY PROCEEDINGS

The Medical Association of Audubon County held one of their pleasant and profitable meetings in Audubon, Sept. 19. We know that it is profitable for professional men to meet and talk over their work and for that reason, we know it was a profitable meeting. We know that it was a pleasant meeting for we heard some of the doctors discussing, for instance, the dinner. We know that would make a pleasant meeting.

The Benton County Medical Society was called at the request of Dr. J. E. Luckey, County Representative of the Volunteer Medical Service Corps at Vinton. Those present were Drs. George A. Wagner, I. S. Boles, T. L. Chadbourne, T. L. Thomson, F. C. Carle, G. M. Luckey, C. C. Griffin, Jr., G. R. Woodhouse, C. L. Bradley, F. W. Bush, C. E. Thomas, J. P. Whitney, J. E. Luckey, A. L. Bryan and C. A. Vincent.

The meeting was called to order by Dr. George A. Wagner, president. Dr. Luckey was called on and explained in detail the desire of the government to enroll every member of the medical profession in good standing, in the Volunteer Medical Service Corps of the U. S. A.

The following resolution was introduced and its adoption moved:

"Be it Resolved, That it is the sense of the Benton County Medical Society that its members at once comply with the requisite of the government and apply for membership in the Volunteer Medical Corps of the United States."

Unanimously adopted by rising vote.

All present signified their willingness to apply for membership in the Volunteer Medical Service Corps of the U. S., as soon as blanks are furnished.

On motion it was ordered that a copy of the foregoing be furnished Dr. J. E. Luckey.

J. P. WHITNEY, Secretary.

In offering their service the doctors are agreeing to leave their practice and enter the service if the government requires their services.

This is probably the only profession or single line of civic work where the members have so unselfishly offered, as a body, to leave their active work in civil life for the war work.

Fee bill adopted by C. R. Jones, M. B. Weir, R. B. Chisholm, and H. D. Hull of the Cass County Medical Society was as follows:

Obstetric Cases—Ordinary cases \$15 and mileage. Longer than six hours, \$1 an hour extra.

Country calls, \$2.50 first mile; 50c a mile thereafter.

Night calls \$1 to \$2 extra according to case and distance.

No calls in country less than \$3.

Town calls, \$1.50 to \$2.50; single calls, \$2.

Office calls, \$1.

Telephone prescriptions same as office prescriptions.

No accounts to run longer than sixty days.

M. B. WEIR,

C. R. JONES,

H. D. HULLY,

R. B. CHISHOLM,

Committee.

The Delaware County Medical Society held a session at the offices of Dr. H. A. Dittmer on September 11; those in attendance being Drs. E. J. Wintenberg of Delhi, C. B. Rogers of Earlville, M. E. Dittmer of Colesburg, Hugh Livingston of Hopkinton, and H. A. Dittmer, T. J. Burns, and H. B. Byers of Manchester. Dr. H. M. Bradley and Dr. E. G. Dittmer were out of the city on the day of the meeting, having been summoned to Waterloo to a meeting of examiners of the local draft boards for a conference on matters affecting the draft.

At a meeting of the Resolutions Committee of the Dubuque County Medical Society held Saturday afternoon, September 21, at Dubuque, the following was unanimously adopted:

"Whereas, Providence has removed from our midst, our beloved brother, Dr. William H. Kinnier, born at Smithville, N. Y., July 5, 1844, graduated from the Albany Medical College, N. Y., in 1870, practiced medicine at New Berlin, N. Y., and Bradford, Penn., thence coming to Iowa in 1885; shortly after, joining this society and one of the first to practice his specialty in Dubuque.

"Resolved, That in the death of Dr. Kinnier, our profession has lost a man of high character, rare ability and unswerving faithfulness, whose life is an unbroken record of kind deeds and noble living; in his professional relations he was fair, ethical and charitable and his whole life worthy of emulation.

"Resolved that we extend to the family of the deceased our deep sympathy in this great bereavement.

"Resolved, That a copy of these resolutions, properly engrossed, be presented to the family and that copies be furnished to the daily papers of the city.

"Resolved, That these resolutions be spread upon the records of the Dubuque County Medical Society.

WM. E. COSTELLO,

O. E. HAISCH,

H. M. PAHLAS,

Committee.

At a meeting of the Iowa County Medical Society held September 2, at Marengo, the following officers were elected: President, C. F. Noe, Amana; vice-president, E. N. Brown, Marengo; secretary-treasurer, L. S. Dietrich, Marengo; delegate, J. L. Augustine, Ladora, alternate, C. F. Ways, Millersburg.

The Osceola County Medical Association held a special session Monday afternoon in Sibley. A number of matters concerning the medical profession were discussed.

Dr. D. G. Lass was chosen acting secretary of the association, vice-president Dr. F. P. Winkler has enlisted with the Medical Corps of the U. S. Army.

It was recommended that Dr. Fillenworth of Melvin act as coroner during the absence of Dr. Winkler. Doubtless the supervisors will confirm the recommendation.

The doctors attending the meeting were Drs. Lass and Ely of Ocheyedan; Dr. Padgham of Harris; Dr. Fillenworth of Melvin; Drs. Hough and Winkler of Sibley.

Southwestern Iowa Medical Association held its annual session at Shenandoah, September 3. Fifty physicians were in attendance. An interesting program was presented. Among the discussions was one on the use of serums and antitoxins. The doctors and their wives were entertained by the local physicians at the home of Dr. Armitage.

September 20, 1918.

9, Rue du Mont-Thabor, Paris.

From—Secretary of the Research Society of the American Red Cross in France.

To—Division Surgeons, Commanding Officers of hospitals and others interested.

Subject—October meeting of the Research Society.

1. A copy of the preliminary program for the next meeting of the Research Society, October 4 and 5, is enclosed. There will probably be some changes in the final program.

2. Please note that this meeting will be held at the assembly room on the ground floor of Red Cross headquarters at Hotel Regina. The entrance is on Rue de Rivoli near the gilt statue of Joan of Arc.

3. The Red Cross headquarters is being moved into the Hotel Regina, which is near a number of excellent hotels which are frequented by American Medical officers. On the Rue de Rivoli, one block

east, is the Hotel du Louvre. The American University Union on rue de Richelieu is three blocks; and the Hotels Maurice and Continental, on Rue de Rivoli, are three and four blocks west. The Grand and other hotels, on and near the Avenue de l'Opera, are only a few minutes walk.

4. Should you care to address me about this meeting or war medicine before the meeting, my address is 9, Rue du Mont-Thabor; but a few days after October 1, perhaps before the meeting, all the departments of the American Red Cross in France will be moved to Hotel Regina.

SEALO HARRIS, Major M. R. C.,
Secretary Research Com.

Preliminary Program of the Research Society of the American Red Cross in France

Trench Foot—1. Etiology and Symptoms by Medecin-Major J. Cottet, Service de Sante, French Armies. 2. Prevention by Colonel Thurston, B.A. in France. 3. Treatment by Colonel Bailey K. Ashford, M. C., A. E. F.

Tetanus—By Sir David Bruce, C.B., F. R. S. Royal Academy, London.

Treatment of Fractures of the Humerus—A Demonstration, by Lieut.-Colonel Joel Goldthwait, Senior Consultant in Orthopedic Surgery, A. E. F.

The Restoration of the Sick and Wounded to the Line—1. Convalescent Depots by Colonel Dalrymple, B.A. in France. 2. The Psychoneurological Aspects of the Restoration of the Sick and Wounded to the Line by Medecin-Major Camus, French Army. 3. Convalescent Camps by Major Neff, M.C., A. E. F. 4. The Effort Syndrome by Major Alfred E. Colin, Senior Consultant in Cardio-vascular Diseases, A. E. F.

Streptococcus Infections of the Respiratory Tract—1. Streptococcus Infections of the Respiratory Tract in the British Army by Captain J. A. Wilson, British Armies in France. 2. The Susceptibility of Convalescents from Measles to Streptococcus Infections by Captain Robert L. Levy, M.C., A. E. F. 3. Streptococcus Infections of the Lungs and Pleura by Colonel Warfield Longcope, M.C., A. E. F. 4. Streptococcus Infections of the Respiratory Tract in the U. S. Army Cantonments during the Winter of 1917-1918 by Major Joseph E. Capps, M.C., A. E. F.

BOOK REVIEWS

1917 COLLECTED PAPERS OF THE MAYO CLINIC, ROCHESTER, MINN.

Octavo of 866 Pages; 331 Illustrations.
W. B. Saunders Company, 1918. Philadelphia and London. Cloth \$6.50.

The eleventh volume of the Mayo Clinic is before us. Edited by Mrs. M. H. Millish. The first commendation is due the editor who has contributed so much to make these volumes classics in medical literature. The Mayo Clinic is no longer a local insti-

tution but belongs to the medical world. The Clinic is based on the universal needs of medicine and surgery to which we may turn for assistance in solving the problems that confront us.

The collected papers are divided into nine sections; alimentary canal, ureginal organs, ductless glands, heart, blood, skin and venereal, head trunk and extremities, technic and general matters, by thirty-five contributors belonging to the Mayo Clinic. Seventeen papers including 142 pages are devoted to the alimentary tract. Among these papers is one by Dr. Balfour, beautifully illustrated, on a method of restoration of gastrointestinal continuity in operations for partial gastroectomy for cancer, a method especially elaborated at the Mayo Clinic.

Dr. Desjardins reports a case of left paraduodenal hernia. Dr. Rosenow presents three papers on antipoliomyelitis serum in horses, a subject on which the author is devoting much original work.

Dr. Stokes gives a paper on the technic of intravenous injections of salvarsan of great practical value. Drs. J. W. and C. H. Mayo present some of their recent work on intestinal surgery, illustrating methods worked out with their usual care and thoroughness. It is impossible to consider more than a very limited number of the valuable papers published in this volume. It is well understood that nothing is allowed to appear in the collected papers that has not been carefully worked out and has been submitted to the criticism of the watchful editor.

A TREATISE ON CYSTOSCOPY AND URETHROSCOPY

By Dr. Georges Luys, Former Intern, Hospitals of Paris; Former Assistant in the Department of Urinary Diseases at the Lariboisiere Hospital; Laurate of the Faculty of the Academy of Medicine. Translated and Edited with Additions, by Abraham L. Wolbaust, M.D., New York. With 217 Figures in the Text and 24 Chromotypographic Plates Outside the Text. Including 76 Drawings from Original Water Colors. C. V. Mosby Company, 1918, St. Louis, Mo.

The English speaking members of the medical profession are greatly indebted to Dr. Wolbaust for the excellent translation of Professor Luyes "Treatise on Cystoscopy and Urethroscopy." Luys' work on this branch of medicine has long been known in this country and the appearance of the book will be highly welcomed by the profession. The publishers are to be congratulated on the execution of a series of beautiful plates on heavy paper, which bring out the details in a most helpful manner. One of the purposes which has been well served, is in behalf of direct vision, cystoscopy and urethroscopy, the value of which is now fully recognized by men trained in this work. Thanks to the fine instruments which have been perfected, aided by the illustrations and text of the book before us, the advanced student and young practitioner with a fair degree of patience can

reach a considerable degree of diagnostic skill in this important field.

Two chapters are devoted to the history of cystoscopy and urethroscopy followed by chapters on technic and a consideration of normal and pathological conditions. The methods of examination by the cystoscope are pointed out and especial attention is devoted to the advantages of direct vision cystoscopy, particularly a chapter on direct cystoscopy by Dr. W. F. Braasch, of the Mayo Clinic.

THE TREATMENT OF WAR WOUNDS

By W. W. Keen, M.D., L.L.D., Emeritus Professor of Surgery; Jefferson Medical College, Philadelphia; Second Edition, Reset., 12 mo. 276 Pages Illustrated. W. B. Saunders Company, 1918. Cloth \$2.00.

When the present war begun it was realized that our knowledge of war surgery needed revision, and among those first in the field was Dr. W. W. Keen whose knowledge and experiences in surgery incident to war was most advanced. The demand for more accurate knowledge, as set forth by Dr. Keen, quickly exhausted the first edition. True to his conception of the needs of the medical profession Dr. Keen at once set about the task of a second edition bringing down to date the most approved methods of wound treatment employed by the English, French, and American surgeons at the front.

The first important sections of the work include transportation and fractures. The character of the wounds inflicted by new weapons are considered, together with new methods of treatment. Beginning with the Carrel-Dakin method, and continuing in succession various other methods, pointing out the technic, their advantages and objections. The location of foreign bodies, tetanus, gas infection, and gas gangrene. After a general consideration of wound treatment Dr. Keen points out the application of the various appropriate methods of treatment to wounds in different parts of the body, particularly of the joints, the abdomen, and the chest. In the treatment of joints and chest he follows rather closely the views of Moynihan. In the concluding part of his book Dr. Keen publishes several personal letters relating to the experience of leading observers. The book is a convenient and interesting resume of recent war surgery.

INTERNATIONAL CLINICS

A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Pathology, Orthopedics, Gynecology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Edited by H. R. M. Landis, M.D., Philadelphia. Volume ii-

xxviii. Series 1918. J. B. Lippincott Company, Philadelphia and London.

There are several valuable contributions, among them is one on a general consideration of pancreatitis by E. W. Archibald, M.D. There are a series of Clinics at several important hospitals on various subjects. Dr. John E. Lind of St. Elizabeths' Hospital presents a contribution on the early diagnosis and treatment of Syphilis of the nervous system.

The particular value of these volumes is the treatment of diseases commonly met with in medical practice by men of the widest experience, and of the highest reputation in the different fields of medicine.

THE SURGICAL CLINICS OF CHICAGO

Volume ii, Number 3 with 63 Illustrations. Published Bi-Monthly, W. B. Saunders Company, Philadelphia and London. Price Per Year, \$10.00.

This number is of particular value in containing clinics from a group of the best known surgeons of Chicago.

Dr. A. J. Ochsner presents an especially fine clinic on Renal Calculus and Gall-stones. The most important clinic at this time is by Dr. Edward Ochsner on the Treatment of Potential and Acquired Static Flat Foot. Dr. Ochsner has devoted considerable attention to flat foot, a subject which at the present time, is attracting much interest on account of its relation to army service. Orthopedists in the American Army in France are revising our views somewhat in pre-combat, combat and post-combat foot conditions.

We would suggest that draft examiners who are not subscribers to the Clinics, procure the June number and study Dr. Ochsner's contribution with much care.

INTERNATIONAL CLINICS

A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles in the Various Branches of Medicine and Surgery. By Leading Members of the Medical Profession Throughout the World. Edited by H. R. M. Landis, M.D. Philadelphia, Volume 1. Twenty-eight Series, 1918. J. B. Lippincott Company. Price, \$2.50.

The volume before us deals mostly with the every-day problems of medicine and not with the unusual and rare cases. The reader is given an opportunity to measure his work with the generally accepted standards of the hospital clinics of the great medical centers. The International Clinics have been well known to the medical profession for many years and have been appreciated for their practical value and helpfulness in dealing with the ordinary medical problems.

A section of this book is devoted to a general Review of Medicine for the year 1917.

THE SURGICAL CLINICS OF CHICAGO

Volume 2, Number 1, with 75 Illustrations, 1918. Published Bi-Monthly. W. B. Saunders Company, Philadelphia and London. Price Per Year, \$10.00.

In this number is a clinic by Dr. A. J. Ochsner. Augustana Hospital: Basal-Celled Epithelioma of Neck; Excision with Ceutery. This relates to an important class of cases which are neglected by the patient, exploited by quacks and too often disregarded by doctors or treated by X-ray. Dr. Ochsner removed the growth with the electrocantery and the underlying deep fascia and lymphatics with the knife from below upwards. Such operative procedure generally results in permanent cure. Dr. Albert E. Halstead demonstrates a large meningeal cyst of traumatic origin. After removing by excision of a part of the cyst the cavity was filled by a transplant of fat to which was attached a piece of fascia lata.

Major Kellogg Speed gives a Clinic on Gunshot of the Head with Reference to Indications for Operation. Dr. Eisendrath on Varieties of Ureteral Strictures. Dr. David C. Straus presents an interesting case of acute ileus caused by adherent appendix. There are other equally interesting clinic cases which we have not the space to give. These citations indicate the value of this series of clinics which have been so highly appreciated.

THE MEDICAL CLINICS OF NORTH AMERICA

January, 1918. Published Bi-Monthly by W. B. Saunders. Price, \$10.00 Per Year.

The first 80 pages is made up of a series of clinics on heart lesions by Dr. Henry A. Christian of Peter Bent, Brigham Hospital, in which the various phases of heart-block and of chronic myocarditis are discussed from a clinical point of view. Then follows a series of cases of diabetes. These cases are presented in much detail from the standpoint of Dr. Joslin's remarkable studies in this disease.

Dr. Edwin A. Lock presents an important case under the head of osteitis deformans with sarcoma of the humerus. Dr. Granis in his work on Gynecology, published in 1916, placed considerable stress of ovarian organotherapy in certain conditions following ablation of the ovaries in hysterectomy cases, now in clinic series he again call attention to the same subject with additional evidence.

Another interesting clinic is by Dr. R. H. Thoma on the Relation of the Teeth and Jaws to General Medicine. Other clinics of equal interest by distinguished clinicians we are obliged to omit in this review. The number before us is of rare merit and brings to our attention much information of unusual cases which from time to time come to the attention of the general practitioner.

UNIVERSITY OF IOWA MONOGRAPHS
STUDIES IN MEDICINE

Volume 1, Number 3. Collected Studies and Reports. Published by the University.

This publication contains 14 papers published in special Journals by members of the faculty and collected and republished by the University for the convenient use of the faculty and students. These papers are carefully prepared and are of considerable merit.

THE BATTLE WITH TUBERCULOSIS AND
HOW TO WIN IT

A Book for the Patient and His Friends by Macdougall King, M.B. Eight Illustrations 12 Mo. with 258 Pages. J. B. Lippincott Company Publishers. Price \$1.50 Net.

It has come to be known that the patient and his friends should be advised of his condition when tuberculosis has attacked him, for it is not the doctor and his medicines alone that can cure him but his cooperation and his friends cooperation that can "win the battle." With this thought in mind Dr. King and his publishers have presented to the public a book, readable, suggestive and helpful. The book is dedicated more to the interested public than to the medical profession. It is a campaign document which leads the interested to follow intelligently a safe course. Since medical treatment can be of little avail the ordering of the patients life at least for a few years is of the first importance and to accomplish this the patient must know his condition and cooperate. The book before us in the hands of the general public would be extremely helpful in the way of furnishing information as to how the war against tuberculosis can best be conducted and how the enemy may be defeated.

THE SPLEEN AND ANEMIA

Experimental and Clinical Studies. By Richard Mills Pearce, M.D., Sc.D., Professor of Research Medicine; with the Assistance of Edward Bell Krumbhaar, M.D., Ph.D., Assistant Professor of Research Medicine; and Charles Harrison Frazier, M.D., Sc.D., Professor of Clinical Surgery, University of Pennsylvania. Sixteen Illustrations, Color and Black and White. J. B. Lippincott Company, 1917. Price, \$5.00.

Experimental and clinical research has shown a relationship between the liver and spleen which promises much therapeutic gain in certain diseases of a hæmolytic nature and serious errors of metabolism. A certain class of cases in which diseases of the blood-forming organs left but little to hope for, and upon which drugs had little effect, now appear to be amenable to successful treatment by splenectomy. It has been exceedingly difficult to determine, except empirically, the value of splenectomy, but within very recent years elaborate

experimental work has brought a new conception of the physiology of the spleen and its co-relation with the liver. The book before us is a resume of the work on the spleen and on splenectomy done in the Department of Research Medicine of the University of Pennsylvania under the direction of Professor Pearce.

The book begins with a short historical sketch of extirpation of the spleen followed by a series of experimental studies on the spleen and anemia, changes in the bone marrow in splenectomy, including changes in the liver and lymph nodes after splenectomy. With chapter eight comes studies on metabolism on the dog before and after splenectomy, including a general summary of experimental studies in chapter nine. The results so far as dogs are concerned were negative. The metabolism studies on man before and after splenectomy are quite different. For obvious reasons, splenectomies in man are for definite disease conditions; for anemia of more or less severity and alterations in metabolism; first, congenital hemolytic jaundice; second, in pernicious anemia.

Part second includes splenectomy in the different types of splenic anemia, Gaucher's Disease, or large-celled splenomegaly; Banti's Disease, or splenomegaly with hepatic cirrhosis and hemolytic jaundice. The last two chapters of part second are devoted to the consideration of medical and surgical treatment.

Part three, Surgical Considerations, by Prof. Charles H. Frazer.

The book contains a somewhat detailed outline of the work of many investigators on this very interesting subject, and will furnish the student of modern medicine with a full account of what has been accomplished in research diagnosis and treatment of obscure disease conditions.

A TEXT-BOOK OF OBSTETRICS

By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. Eighth Edition Revised and Reset, Octavo of 863 Pages with 715 Illustrations, 38 of These in Colors. W. B. Saunders Company, 1918. Cloth, \$5.00 Net.

Part first of this well-known work on Obstetrics is devoted to the physiology, diagnosis and management of pregnancy, and do not differ materially from similar works on obstetrics. Considerable attention is given to the early diagnosis of pregnancy which is of material importance in many cases as pointed out in the text. There are cases in which an opinion is sought and the physician should have in mind the most important signs and also the elements of error in order to avoid serious injustice to the patient and loss of reputation to himself. The author points out the fact that "A positive diagnosis of pregnancy before the sixth week is impossible and the diagnosis may be only presumptive until the fetal heart sounds can be heard and fetal movements are felt." For a time

the serological method of Abderhalden was given considerable attention and much was hoped from it in the early diagnosis of pregnancy, but it has proved a disappointment.

Part second considers the Physiology and Management of Labor and Puerperium followed by Part third treating of the mechanism of labor illustrated by many cuts which are helpful in conducting the various stages of labor. Then comes the chapters treating of the Pathology of Pregnancy Labor and the Puerperium which makes up Part four. The complications of labor associated with pathologic conditions demand the closest attention of the physician and to meet them often tries the knowledge, skill and resources of the medical attendant, not only are lives at stake, but the reputation of the physician also. The last chapter under this section, Puerperal Sepsis, is of such vital importance that it should be read with prayerful care, so many women loose their lives from avoidable accidents. The author traces the history of this interesting complication in some detail which always leaves an impression on the mind of the conscientious student and physician. In relation to obstetric operations the author is inclined to differ from many writers and not undertake the immediate repair of lacerated tissues, but wait for five or seven days or even longer when the conditions are better and the exact degree of injury can be determined when the results will be much better. We agree with this view and we recommend it to the consideration of the profession. Physicians have unjustly been prosecuted with malpractice suits for not doing an unwise and immediate suturing. Much wisdom will be found in this part of the book. The book closes with a chapter on the New-Born Infant. In our opinion this work is entitled to the reputation and credit it has acquired among physicians and students.

PROGRESSIVE MEDICINE

A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Assisted by Leighton F. Appleman, M.D. Lea & Febiger, New York and Philadelphia. Six Dollars Per Annum.

The digest of literature of recent surgery is prepared by Charles H. Frazer, M.D., Philadelphia, and George P. Muller, M.D., Philadelphia. Dr. Frazer takes up the surgery of the head, neck and breast. Dr. Frazer states in the beginning that the journals of Germany and Austria do not reach this country in any number. Those of England and France are much reduced in size and deal mostly with war surgery; the same spirit has entered the journals of our own country. In relation to head injuries, both in civil and military service, these cases should at the earliest possible moment be transported to specially equipped hospitals for a

complete diagnosis. Partial operations and further transportation should be avoided. This was pointed out by European neurological surgeons, including Harvey Cushing, in the early part of the war. X-ray examinations are of the greatest importance in accurately locating fractures and foreign bodies. The most approved methods of diagnosis and treatment are pointed out, based on extensive observations.

Questions in relation to Cranioplasty have been pretty well worked out from the large number of war cases. Considerable stress has been placed on blood pressure in the prognosis of head injuries. In relation to radical operations on the Gasserian ganglion Abbe holds that they are difficult and dangerous and should not be undertaken except by the expert. A method has been outlined for incising the Parotid Gland without injury to the facial nerve. The repair of gunshot injuries of the jaws is rather extensively reviewed. Operations for cancer of the breast has again been gone over with considerable care.

Dr. George B. Muller extensively reviews the War Surgery of the Chest. The mortality has been high because of the serious complications. Of 3,455 cases in the French Army 688 deaths followed. This review is most interesting and important.

A most interesting digest of Infectious Diseases is prepared by Dr. John Rush of Philadelphia, but is too extensive to be adequately reviewed. This section of the book is recommended to those who desire to be informed on the latest phases of this most important subject.

A TEXT-BOOK ON THE PRACTICE OF MEDICINE

By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine, Medico-Chirurgical College Graduate School, University of Pennsylvania. Thirteenth Edition Thoroughly Revised with the Assistance of John H. Musser, Jr., M.D., Associate in Medicine, University of Pennsylvania, Octavo of 1259 Pages, Fully Illustrated. W. B. Saunders Company, 1917. Philadelphia and London. Price, \$6.00 Net; Half Morocco, \$7.50 Net.

The appearance of a new edition of this well-known work on the Practice of Medicine after four years since the twelfth edition appeared, shows the popularity of the work and the desire on the part of the publishers and authors to offer a revised and enlarged edition which will bring the subject of medicine up to date. Not only has the text been revised, but several new subjects been added which will place the book among the foremost works on medicine. So many new things have appeared in this branch of medicine that the profession will welcome the new edition of Anders which has so long found a place on the shelves of the Doctor's library.

CONCERNING SOME HEADACHES AND EYE DISORDERS OF NASAL ORIGIN

By Greenfield Sluder, M.D., St. Louis, Mo.
C. V. Mosby & Co., 1918.

This book is the most important recent contribution to rhinology. It is one of the few rare works, combining scientific research, and every day practical observations. A rapid reading of the book brings to the reader's consideration, many practical points in connection with headache. A careful study of the work reveals a most interesting research. The introduction referring to some points on the minute pathology of the nose by Jonathan Wright, should be read carefully by every rhinologist. The case histories are very illustrative.

L. W. Dean.

IOWA MEDICAL MEN IN THE WAR

To Camp Crane, Pa., from Rockefeller Institute, Lieut. M. T. Morton, Iowa City, Mobile Hospital; from Camp MacArthur, Capt. E. S. Evans, Grinnell.

To Camp Gordon, Ga., Base Hospital, from Camp Sevier, Capt. J. R. Brady, Sioux City.

To Camp Lee, Va., from Fort Ogelthorpe, Lieut. A. H. Konigmacher, Council Bluffs.

To Camp Sherman, Ohio, base hospital, from Camp Dodge, Capt. G. T. McCauliff, Webster City; Lieut. R. W. Wood, Newton; base hospital for instruction, Lieut. L. B. E. Oliver, Sigourney.

To Camp Travis, Texas, from Fort Riley, Lieut. H. S. Detchon, Victor.

To Camp Wheeler, Ga., from Camp Meade, Capt. G. R. Hill, Charter Oak.

To Camp Greene, N. C., from Camp Meade, Lieut. G. H. Steele, Belmond; base hospital, from Camp Bowie, Capt. P. E. Sawyer, Sioux City.

To Camp Hancock, Ga., base hospital, from Camp Shelby, Capt. C. A. Katherman, Sioux City.

To Camp Kearney, Calif., from Fort Riley, Capt. H. M. Hoag, Mason City.

To Camp Logan, Texas, from Fort Riley, Capt. A. M. Sherman, Clarinda; Lieut. F. H. Dierker, West Point.

To Camp Newton D. Baker, Texas, base hospital, from Camp Bowie, Lieut. W. C. Hand, Hartley.

To Fort Benjamin Harrison, base hospital, from Camp Cody, Capt. E. L. Rohlf, Waterloo.

To Lakewood, N. J., for instruction, Lieut. J. B. Knipe, Armstrong.

To Waynesville, N. C., from New Haven, Capt. S. C. Buck, Grinnell.

To Camp Custer, Mich., Capt. J. B. Naftzgar, Sioux City.

To Camp Dix, N. J., base hospital, from Fort Oglethorpe, Lieut. T. F. E. Bess, Fort Madison.

To Camp Dodge, Iowa, base hospital, Capt. G. L. Prentice, Troy.

To Camp Gordon, Ga., base hospital, from Camp McClellan, Lieut. C. W. Tidball, Independence.

To Camp Grant, Ill., evacuation hospital, from

Army Medical School, Lieut. S. D. Jones, Fort Dodge.

To Camp Greene, N. C., from Garden City, Lieut. L. D. Huff, Lenox.

To Camp Hancock, Ga., evacuation hospital, from Fort Oglethorpe, Lieut. C. E. Chenoweth, Iowa City.

To Camp Jackson, S. C., base hospital, from Fort Oglethorpe, Major P. B. McLaughlin, Sioux City.

To Camp McClellan, Ala., evacuation hospital, from Camp Shelby, Capt. W. C. Newell, Ottumwa.

To Camp Meade, Md., from the Surgeon General's office, Lieut. G. H. Steele, Belmond.

To Camp Wadsworth, S. C., evacuation hospital, from Camp Sevier, Lieut. D. H. Osborn, Monticello; from Southeastern department, Capt. A. C. Strong, Burlington.

To Camp Wheeler, Ga., as orthopedic surgeon, from Fort Oglethorpe, Lieut. H. L. von Lackum, Iowa City.

To Jefferson Barracks, Mo., from Camp Dodge, Lieut. J. S. Caldwell, Lenox.

To Fort Riley, base hospital, from Camp Travis, Lieut. L. D. McNaughton, Eagle Grove.

To Fort Williams, Me., from Fort Riley, Lieut. M. N. Gernsey, Waverly.

To Lakewood, N. J., Lieut. J. S. Knipe, Armstrong.

To Washington, D. C., Surgeon General's office, from Camp Gordon, Capt. J. V. Keogh, Dubuque.

The following order has been revoked: To Rochester, Minn., Mayo Clinic, for instruction, and on completion to his proper station, from Camp Zachary Taylor, Lieut. A. E. Acher, Fort Dodge.

To Camp Crane, Pa., from Camp Green, Capt. P. E. Sawyer, Sioux City.

To Camp Custer, Mich., from Fort Oglethorpe, Lieut. L. T. Reed, Gravit.

To Camp Devens, Mass., base hospital, from Camp Dodge, Capt. M. A. Healy, Boone; Lieut. J. G. Clapsaddle, Burt.

To Camp Dodge, Iowa, base hospital, for instruction, Lieut. C. A. Manahan, Marengo.

To Fort Benjamin Harrison, Lieut. P. V. Ketchum, Des Moines, base hospital, from Camp Grant, Capt. A. D. McKinley, Lieut. H. E. Ransom, Des Moines.

To Fort Oglethorpe, base hospital, from Camp Dodge, Lieut. A. C. Davis, Iowa City; for instruction, from Camp Bowie, Lieut. B. S. Barnes, Shenandoah.

To Fort Snelling, Minn., base hospital, from Camp Dodge, Lieut. M. O. Brush, Shenandoah.

To Hot Springs, N. C., from Wichita Falls, Texas, Lieut. C. Kail, Stratford.

To Plattsburg Barracks, N. Y., from Fort Oglethorpe, Major C. Van Epps, Iowa City.

Honorably discharged, Lieut. F. H. Gaffey, Bradgate.

FIGHT SOCIAL DISEASE

Part of the \$24,000 allotted Iowa from the Federal appropriation for the contract of social disease, will

be used in a campaign of education to be started at once.

Dr. Sumner is planning to have a film, recently purchased from the war department, exhibited in all parts of the state.

Dr. Sumner has aranged with the Rotary Club and the Chamber of Commerce to have the film shown in Des Moines before a mass meeting of men in the near future.

MEDICAL SOCIETY WILL MEET IN DES MOINES

The Medical Society of the Missouri Valley will meet in Des Moines next September. This was decided at the thirty-first annual session of the society held in Omaha which was attended by a number of Des Moines physicians. Dr. Gershom H. Hill read a paper dealing with psychic treatment for men afflicted with shell shock.

Supplement to list of Iowa physicians who have been recommended by the Surgeon General for commissions in the Medical Officers' Reserve Corps.

Burke Powell, 1st Lieut., Albia.

Robert More Wallace, 1st Lieut., Algona.

Paul Archibald Park, 1st Lieut., Atkins.

Frank Ellsworth Strickling, 1st Lieut., Birmingham.

Fred Ernest Simeral, 1st Lieut., Brooklyn.

Edward Francis LaForce, Capt., Burlington.

William Henry Redmond, 1st Lieut., Cedar Rapids.

Wentzle Ruml, Capt., Cedar Rapids.

Charles Stephen Hickman, 1st Lieut., Centerville.

Robert Henry Woodruff, Capt., Charles City.

George Donohoe, Major, Cherokee.

Franklin Taylor Scanlon, Capt., Clear Lake.

Marion Ellsworth Anderson, 1st Lieut., Clinton.

Henry John Heusinkveld, 1st Lieut., Clinton.

Herman Alexander White, Capt., Clinton.

George Hartley Sollenbarger, Capt., Corydon.

Rose Holland Gregory, Capt., Creston.

Percival Bainbridge Glew, 1st Lieut., Dallas Center.

Frederick Lambach, Capt., Davenport.

George McClelland Middleton, Capt., Davenport.

Claude Melville Campbell, Capt., Decorah.

Wallace Asbury Dunlap, Capt., Des Moines.

Roy Robert Morden, Capt., Des Moines.

Eliel Grant Myrick, 1st Lieut., Fairfield.

Gabriel S. Westley, 1st Lieut., Fort Dodge.

Gilbert Thompson McDowell, Capt., Gladbrook.

George Earl Snearly, 1st Lieut., Goodell.

Clarence Irouth Thomas, 1st Lieut., Guthrie Center.

James Daniel Simons, 1st Lieut., Indianola.

Francis Leonard Love, Major, Iowa City.

John Roland Black, 1st Lieut., Jefferson.

Guy Jerome Hall, 1st Lieut., Keokuk.

Mitchell Charles Mackin, 1st Lieut., Knoxville.

John Michael Weiss, Capt., Knoxville.

Carl Carruth Lytle, 1st Lieut., Lansing.

George Gibson, 1st Lieut., Lehigh.

Charles John O'Keefe, 1st Lieut., Marble Rock.
 Michael Francis Joynt, 1st Lieut., Marcus.
 Thomas Allen Burke, 1st Lieut., Mason City.
 Matthew Joseph Fitzpatrick, 1st Lieut., Mason City.
 Everett Edwin Lusk, Capt., Missouri Valley.
 Bruce Bilo Overall, 1st Lieut., Monona.
 Louis George Stuhler, 1st Lieut., Monticello.
 William Corns, 1st Lieut., Montour.
 Cassius True Lesan, Capt., Mount Ayr.
 Thomas Henry Chesnutt, 1st Lieut., Mount Pleasant.
 Francis Fisher Ebersole, Capt., Mount Vernon.
 John Hiram Wilson, 1st Lieut., Mount Hamill.
 Nathan Boggs, Capt., New London.
 Charles Edward Simpson, 1st Lieut., Norway.
 James Fay Cole, Capt., Oelwein.
 Jay Gilbert Roberts, Capt., Oskaloosa.
 Roy Everett Parry, 1st Lieut., Scranton.
 James Love Collins, 1st Lieut., Sheffield.
 John Otis Weaver, 1st Lieut., Shenandoah.
 Jay Melancthon Kilborne, Capt., Sioux City.
 John Emil Swanson, Capt., Sioux City.
 Clifford Ray Watkin, 1st Lieut., Sioux City.
 Benjamin John Voigt, 1st Lieut., Spencer.
 Alfred Heaton Schooley, 1st Lieut., Terril.
 Emmett Terry Wickham, Capt., Washington.
 Matthias Southward Corlett, 1st Lieut., Westgate.
 Charles Sidney Seely, 1st Lieut., What Cheer.
 Martin Oscar Stauch, 1st Lieut., Whiting.

MARRIAGES

Dr. Ralph Ellsworth Brooker of Fort Des Moines to Miss Hazel Perley of Indianola.

Dr. F. C. Schaaf of Williamsburg to Miss Louise Setzer of Middle Amana.

Dr. C. V. Beaver of Anita and Miss Mary Eiler of Omaha, August 28.

Dr. Q. S. Buzard of Carroll and Miss Daisy Price of Independence were married at Independence, August 31.

The marriage of Dr. D. T. Grady of Emmetsburg and Miss Elizabeth Reihsen of Benson, Minnesota is announced.

Dr. C. H. Burke and Miss Jeannette Grissel of Algona and Iowa City were recently married at Iowa City.

BIRTHS

To Dr. and Mrs. George Maresh of Riverside, a boy.

To Dr. and Mrs. C. A. Nolan of Ogden, a daughter.

To Dr. and Mrs. R. H. Whalen of Tama, a daughter.

To Dr. and Mrs. Colvin Thomas of Iowa City, a son.

To Dr. and Mrs. Francis Holbrook of Des Moines, a daughter.

To Dr. and Mrs. Julius S. Weingart of Des Moines, a son.

To Dr. and Mrs. Glen E. Bond of Guthrie Center September 10, a boy. Dr. Bond is in the United States Service, located at Fort Flagler, Washington.

MEDICAL NEWS NOTES

Dr. Wm. Bossenberger of Williams is convalescing from an operation at Ellsworth Hospital.

The beautifully located and well organized hospital at Boone, the Eleanor Moore Hospital, is offered to Boone county in consideration of the county assuming an indebtedness of \$11,000. This will insure the county a very valuable hospital property for a small investment.

Dr. C. W. Wolf has sold his practice and residence to Dr. O. E. Harvey of Mingo, and is intending to move to Des Moines.

Dr. C. H. Johnson, formerly of Alta, is now surgeon in charge of one of the transports carrying troops "over there." He recently returned from a trip to Russia.

Dr. Dick Woodcock of Alberta, Canada, has located in Muscatine.

Dr. F. V. Hibbs of Lohrville has located in Carroll.

Dr. A. O. Williams of Ottumwa received an interesting letter from Captain John H. Baldrige who is surgeon on the transport Merritt cruising in the Yellow Sea between Manila and the China and Japan ports. The world which seemed to us so far away a few years ago now comes to us so near that we no longer consult our maps for information.

It is reported that every doctor in Harrison county has enlisted in the Medical Service Corps.

Dr. W. O. Edwards of Oxford died September 4 at the age of seventy-one years.

Dr. F. P. Boyd has removed from Griswold to Cedar Falls.

Mrs. Dr. C. R. Russell of Keosauqua was recently operated upon at an Ottumwa hospital.

Dr. S. S. Spicer of Blainstown has moved to Grinnell.

Dr. J. E. O'Grady of Schaleer recently suffered a temporary incapacitating injury to his hand.

Dr. William B. Newton formerly of Muskogee, Oklahoma, has moved to Fort Dodge and will for the present occupy the offices of Dr. L. M. Martin during his services in the Army.

Dr. M. B. Wier has located in Griswold.

Major Charles E. Ruth of Des Moines is stationed at Fort McKinley, Rizal, P. I. in charge of the surgical service.

Dr. G. W. Murphy of Danbury has removed to Sioux City.

Dr. Frank H. Allen of Madrid has located in Boone.

Dr. L. F. Keeling of Holstein has removed to Manson.

Mrs. Emma Roach Griffin of Chicago wife of Capt. John M. Griffin formerly of Albia, died at her home in Chicago from pneumonia October 5.

To Fort Riley for instruction, Capt. A. P. Stoner, Des Moines; Capt. H. D. Mereness, Dolliver.

Capt. John M. Griffin, Chicago, formerly of Albia is stationed at Camp Greenleaf, Fort Oglethorpe. His son Private Robert W. Griffin, is in Company A. Camp Scott, American Red Cross, Chicago.

It has been reported that Captain C. N. O. Leir of the 168th Regiment (Rainbow Division) was made blind by gas shells but this is a mistake for Capt. Leir himself denies being blind and only regrets losing any part of the great drive on account of unfriendly German gas sending him to the hospital.

Dr. C. W. Kinckerbacker of Cedar Falls died suddenly in Chicago recently.

Mrs. Dr. Dalger of Fertile is convalescing at the Hampton hospital from an operation.

Dr. F. H. Allen of Madrid has moved to Boone where he will engage in the practice of medicine.

Dr. G. A. McMaster of Essex was recently operated upon at an Omaha hospital for appendicitis.

Capt. W. H. Jenks, a former Waterloo physician serving in the British Army, has been cited for bravery and decorated by King George of England. Captain Jenks expresses the hope that he will soon be transferred to the American Expeditionary Forces.

Dr. A. E. Bricker of Breda has moved to Lohrville to take up the practice of Dr. Hibbs.

Dr. J. H. Darling of Ogden, formerly of New London, has received information that his son Leslie Darling was killed in action. Leslie was a soldier in Company H, 168th Regiment in the Rainbow Division.

Dr. Matt Weir, formerly of Grant, has moved to Griswold and will engage in practice with Dr. Jones.

Dr. Edna Whitcomb Brown of Gilmore City was the first woman physician in Iowa to pass the examination of the medical board at Camp Dodge for war service. She will be sent to the prison hospital at Fort Oglethorpe, Ga. She formerly lived in Des Moines, where she was an office assistant of Dr. Lucy Harbach.

After fourteen years of practice as a physician and surgeon in Fort Madison, Dr. Carl W. Wahrer, announced recently that he has sold his office equipment and practice to Dr. W. F. Noble of Tecumeari, N. M., who has arrived in the city to take up his work here. Dr. Wahrer stated that he has not made any definite plans for the future, deciding to at first take a rest of a month or so which will be spent with relatives in California, for which state he will leave within a few days. He is considering several matters relative to future location. He has been very successful in his practice at Fort Madison, and is recognized as one of the most learned surgeons in this part of the country.

Dr. Hiram Irving of Winterset has the honor of wearing three blue stars and one gold star. Three boys are in France and one made the supreme sacrifice in the service of their country.

Dr. George Donohue, superintendent of the Cherokee insane hospital, has entered the United States Medical Corps as a Major.

Dr. Wentzle Ruml, who recently entered the Army a captain in the Medical Corps was for many years associated with Dr. Henry and John Ristin in a very large and lucrative practice. Dr. Ruml has two sons in the Army, Lieut. Wentzel Ruml in the Sanitary Corps and Beardsley Ruml in the personal or psychologic department. Beardsley is a graduate of Yale University and was an instructor in the department of psychology previous to enlistment.

It is said that there is in Des Moines a physician who not only makes no charge for his professional services to soldiers, but who also serves free, families from whom the war has taken the wage earner. He has purchased war securities to the limit of his resources. He is physically disqualified for services himself and in this manner is doing his bit. Let us hope that there are many other physicians in all parts of the state equally patriotic.

Dr. Bundy Allen of Iowa City attended the convention of the American X-ray Society at Fort Oglethorpe, Ga., September 4-6, where he met his confrere, Dr. Clarence Van Epps prominently connected with the medical work of the Army. Dr. Allen is editor of the Journal of Roentgenology, the official organ of the X-ray Society of the West.

Dr. Fisher of Sloan has concluded a lease for the Talboy Hospital at Onawa. Dr. Talboy has entered the service of the United States Army.

Captain Coral R. Armentrout, a noted surgeon of Keokuk, on his recent departure for war service was escorted to the train by his Elk friends, to bid him Godspeed with words of appreciation and affection. Sincere sentiments spoken: "The Order of Elks is closely linked with our country and feels deeply its duty to work for the country and the flag. But whatever the order does in its patriotic work is as nothing compared with the sacrifices made by some of its individual members in this time of stress and war. We gather here to bid you Godspeed, and while you are gone we ask you to take with you this small silken flag to remind you that you are always in the hearts and the memory of your brothers and to stimulate you at times in devotion to our country and your great work for it." "I thank every one of you," said Captain Armentrout. "You don't know how to appreciate such things as this until you are going away. One thing about the Elks is that they are always ready." There was a hearty handshake with each Elk in the circle, and when the train pulled out a waving of flags and cheery shouts to the departing officer.

Lieut. E. P. Weih of Clinton has been sent overseas with a unit of ten men under the command of Major Ney as an operating team for brain surgery.

Dr. Baldwin of Ruthven, not long ago enjoyed while returning from a call, a collision with another machine. A broken nose was the result.

Dr. E. L. Merriam has four sons serving in the United States Army.

Lieut. F. L. Williams with the medical department of 168th Iowa Infantry was wounded at the battle of Sergy.

Dr. J. D. Dunshee of Harlan, serving with the British Army, was wounded in the leg, the bullet fracturing a bone.

Dr. C. H. Johnson of Storm Lake is serving as a surgeon on one of the United States transports.

INFLUENZA SYMPOSIUM AT AMERICAN PUBLIC HEALTH ASSOCIATION MEETING

The influenza epidemic will be made the most important subject of discussion at the December meeting of the American Public Health Association to be held in Chicago. Some of the questions which will be discussed are the following:

Is Influenza Vaccine Efficacious as a Prophylactic?

What Type of Vaccine Is Most Useful?

Does it Help as a Therapeutic?

What About Nose and Throat Sprays?

What are the Results with Convalescent Serum?

What about the Open-Air Treatment?

How can the Health Officer Coordinate Hospital, Medical, Health, and Relief Agencies in Similar Calamities?

How can we take Advantage of the Epidemic for the Benefit of more Adequate Health Appropriations and Better Community and Personal Hygiene?

The detailed influenza program is not yet ready as we go to press. The papers read at the meeting will be published in the American Journal of Public Health.

Headquarters of the meetings will be at Hotel Morrison, Chicago, the dates, December 9-12, 1918.

The secretary of the association may be addressed at 126 Massachusetts avenue, Boston, Mass.

PROCAINE AND NOVOCAINE IDENTICAL

To the Editor:

It appears that in certain quarters the attitude is taken that the local anesthetic sold as Procaine is not identical with that marketed as Novocaine. The Subcommittees on Synthetic Drugs of the National Research Council believes it important that this misunderstanding should be corrected and hence offers the following explanation:

The monohydrochloride of para-amino-benzoyl-diethylamino-ethanol, which was formerly made in Germany by the Farowarke, vorm. Meister, Lucius and Bruening, Hoechst A.M., and sold under the trademarked name Novocaine, is now manufactured in the United States. Under the provisions of the Trading with the Enemy Act, the Federal Trade Commission has taken over the patent that gave monopoly for the manufacture and also of the local anesthetic to the German corporation, and has issued licenses to American concerns for the manufacture of the product. This license makes it a condition that the product first introduced under the proprietary name "Novocaine" shall be called

"Procaine," and that it shall in every way be the same as the article formerly obtained from Germany. To insure this identity with the German Novocaine, the Federal Trade Commission has submitted the product of each firm licensed to the A.M.A. Chemical Laboratory to establish its chemical identity and purity, and to the Cornell pharmacologist, Dr. R. A. Hatcher, to determine that it was not unduly toxic.

So far, the following firms have been licensed to manufacture and sell Procaine:

The Abbott Laboratories, Ravenswood, Chicago.

Farbwarke-Hoechst Company, New York, N.Y.

Rector Chemical Co., Inc., New York, N.Y.

Calco Chemical Company, Bound Brook, N.J.

Of these, the first three firms are offering their products for sale at this time, and have secured their admission to New and Nonofficial Remedies as brands of Procaine which comply with the New and Nonofficial Remedies standards.

While all firms are required to sell their product under the official name "Procaine," the Farbwerke-Hoechst Company is permitted to use the trade designation "Novocaine" in addition, since it holds the right to this designation by virtue of trademark registration.

In conclusion: Procaine is identical with the substance first introduced as Novocaine. In the interest of national nomenclature the first term should be used in prescriptions and scientific contributions. If it is deemed necessary to designate the product of a particular firm, this may be done by writing Procaine-Abbott, Procaine-Rector, or Procaine-Farbwerke (or Procaine (Novocaine brand)).

Yours truly,

Julius Steiglitz, Chairman.

Subcommittee on Synthetic Drugs, National Research Council.

CHLORAZENE

In a recent number of the "Presse Medicale" for January 31, 1918, Napersonne advocates the use of chlorazene as a disinfectant in the treatment of ocular infections, such as purulent ophthalmia and corneal ulcers. He found that this antiseptic gave very successful results and was virtually free from irritating effect even in strong solutions, in fact he uses it in a concentration of one per cent. and sometimes even stronger. However, for ordinary eye work a solution of 1:1000 to 1:250 will be found sufficiently strong, and this will give results which cannot be obtained from boracic acid or from the simpler and much feebler antiseptics now generally in use.

Chlorazene is becoming more and more widely used as an antipsetic for virtually all purposes. It is manufactured by The Abbott Laboratories, Chicago, Illinois.

4 Useful Products

CHYMOGEN removes the only objection to milk as a food for infants and invalids by preventing the formation of clots or curds without in any way altering the taste or value.

Chymogen precipitates the casein in small flocculent particles which are easily reached and digested. Full directions on request.

CORPUS LUTEUM (Armour) in the neuroses of women is dependable as it is made from selected true substance.

PITUITARY LIQUID (Armour) is standardized physiologically and is without the inhibiting chemicals used as preservatives in other preparations of the kind.

1/2cc for obstetrical. 1cc for surgical use.

THROMBOPLASTIN SOLUTION (Armour)
is a specific hemostatic, in 25cc bottles.

ARMOUR AND COMPANY
2569
CHICAGO



Day Phone Douglas 8177

Night Walnut 3712

Laboratory of Clinical Pathology

517-18 City National Bank Building

Omaha, Nebraska

Is fully equipped to do Clinico-pathological, chemical and biological tests.

Specimens sent in will receive personal attention.

Reports are made promptly by phone or wire.

Our rates are moderate.

Containers, culture tubes etc., will be sent free upon request.

Laboratory of Clinical Pathology

MICHAEL G. WOHL, M. D.

517-18 City National Bank Building

Omaha, Nebraska

CALCREOSE

Calcreose is a creosote product, made in the United States of America, by an American manufacturer. Clinicians have used it with good results in the treatment of all forms of bronchitis and especially the bronchitis accompanying pulmonary tuberculosis. It has been taken for long periods of time, and in large doses, without causing gastric irritation or discomfort; no burning; no nausea. Calcreose is also valuable in gastrointestinal infections. Incidentally, the price of this product is far below that of other creosote products of foreign manufacture. The booklet "Calcreose Therapeutics" which contains all information as to indications, dosage and method of administration, may be obtained by writing to The Maltbie Chemical Co., Newark, N. J.

YEAST

There is a difference of opinion concerning the nature of the constituent of the yeast which gives it therapeutic value. Some investigators claim a direct bactericidal effect, others regard such effect as due to by-products of fermentation such as alcohol and various acids, still others regard the action as due to the chemotactic influence of the high nuclein content of the yeast. According to the Dispensatory, the experiments of Walzou and Sacharow have shown that yeast increased the opsonic index of dogs for staphylococci and streptococci. This may help to explain its favorable action in infectious conditions.

The Dispensatory mentions the fact that the ordinary yeast cake of American bakers may well be substituted for brewers' yeast. In view of Hawk's investigations this statement may very well be true. Compressed yeast is generally to be preferred because of the fact that it is carefully standardized and a uniform product is always obtainable. Sadtler refers to the researches of Hansen—who early separated various species of yeasts used in the industries. Among these varieties of *Saccharomyces*, *cervisiae* and *Saccharomyces Pastorinus* were used in the brewing of beer; *saccharomyces ellipsoideus* in the manufacture of wine. Sadtler states that it is prepared as compressed yeast in cakes, generally with the addition of potato-starch. The National Formulary does permit the presence of species of *saccharomycetaceae* other than *Sacchyomyces cerevisiae* Meyen. At all events, the composition of bakers' yeast can be controlled, and this yeast possesses the advantages of availability and uniformity.

During May the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

George V. Brady & Co.:

Barium Sulphate-Brady for Roentgen-Ray Work.

Johnson & Johnson:

Chlorine-Soda Ampoules.

Lederle Antitoxin Laboratories:

Antipneumococcic Serum, Type I.

Monsanto Chemical Works:

Chlorcosane-Monsanto.

Morganstern & Company:

Acid. Phenylcinch.-Morgenstern.

Acid. Phenylcinch.-Morgenstern Tablets.

Sodium Phenylcinch.-Water-Morgenstern.

Parke, Davis & Company:

Antipneumococcic Serum, Type I.

Rector Chemical Company, Inc.:

Procaine-Rector.

E. R. Squibb & Sons:

Antipneumococcic Serum, Type I.

During June the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Cutter Laboratory:

Antipneumococcic Serum, Type I.

Mead Johnson & Co.:

Mead's Dextri-Maltose, No. 2.

Mead's Dextri-Maltose, No. 3.

H. K. Mulford Co.:

Antipneumococcic Serum, Type I.

Antipneumococcic Serum, Polyvalent.

During August the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Heyden Chemical Works:

Silver Proteinate—Heyden.

E. R. Squibb and Sons:

Chloramine-T, Squibb.

Chloramine-T, Surgical Paste, Squibb.

Chloramine-T, Tablets—Squibb, 4.6 grains.

Dichloramine-T, Squibb.

Abbott Laboratories:

Parresined Lace Mesh Surgical Dressing, Abbott.

Phenylcinchoninic Acid—Abbott.

During September the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Non-proprietary Articles:

Benzyl Alcohol.

Armour and Company:

Corpus Luteum Capsules, 2 grains.

Thromboplastin solution—Armour.

Gilliland Laboratories:

Antipneumococcus Serum, Type I.

Hynson, Westcott and Dunning:

Phenmethylo—H. W. and D.

Phenmethylo Ampules, 1 per cent., H. W. and D.

Phenmethylo Ampules, 2 per cent., H. W. and D.

Phenmethylo Ampules, 4 per cent., H. W. and D.

Riedel and Company:

Salipyrine Tablets, 7½ grains.

E. R. Squibb and Sons:

Chlorcosane-Squibb.

Halazone-Squibb Tablets, 1-16 grain.

Solargentum—Squibb.

The Journal of the Iowa State Medical Society

VOL. VIII

DES MOINES, IOWA, DECEMBER 15, 1918

No. 12

PNEUMONIA AND ITS COMPLICATIONS AT THE BASE HOSPITAL CAMP DODGE*

MAJOR JOSEPH L. MILLER, M.R.C., Chicago

(Published by permission of the Surgeon General)

First I wish to thank you for this opportunity to appear before you. I do so with special pleasure because I feel that most of you here have friends or relatives at Camp Dodge and will be very glad to get first hand information in regard to the various circumstances to which they have been subjected.

Up to the present time we have had about 13,000 patients in the Base Hospital, with about 80,000 troops that have passed through the camp. This would appear as a rather large percentage of sickness, one in five or six. In a hospital of this character even the most minor troubles are referred to the hospital. So we get many cases which in civil life would not even consult a physician and certainly would not discontinue work. Therefore the number of really sick people as we would consider it has been comparatively small and has been made up almost entirely of the contagious diseases.

The presence of contagious diseases in camps is not a mystery. Just as soon as we bring together a large number of people, many of them from country districts where they have not been exposed to the various contagious diseases, when we see how they mingle together at mess and especially how they sleep with large numbers in a room, it is not surprising that when any infection develops it is very apt to rapidly spread through the camp and involve all those who are susceptible. And among those contagious diseases we must include pneumonia, which would be classified just as would mumps, typhoid fever, measles, scarlet fever, etc. The most prevalent infectious disease in our camp has been mumps. We have had in the hospital at one time as high as 392 patients with this malady, and at no time less than 110. Next comes measles. Scarlet fever and

diphtheria are not frequent, meningitis has been infrequent, only about thirty cases, and about the same number of smallpox. As stated, there is no mystery regarding the prevalence of these diseases in camp when we consider what happens when we bring large numbers of people together.

The subject I wish to speak of today is pneumonia, which has been a serious epidemic on account of the relatively high mortality. We have had in the hospital up to last night (May 7) 676 cases of pneumonia. Four hundred of these have entered the hospital since the 20th of March, 276 entered the hospital previous to the 20th of March. We divide them in this way because the two groups represent two types of epidemics of pneumonia. From the 1st of October to the 20th of March the form of pneumonia was that caused by the ordinary pneumococcus, with low mortality, between 10 and 12 per cent. and with infrequent empyema. On the 20th of March there appeared this severe type of pneumonia with streptococcus infection, where large numbers of cases came into the hospital and with a great frequency of complications, empyema appearing in many cases and with high mortality instead of a mortality of about 11 per cent. Since the 20th of March we have had a mortality of 32½ per cent.

With reference to the cases that appeared in camp up to the 20th of March, there was no epidemic at any time; that is, there came into the hospital one or two cases a day from the 1st of October up until the 20th of March. Especially the first one hundred cases we had ran a very mild course with a mortality of only 6 per cent. As we went farther along, the epidemic gradually became somewhat more severe so that the average mortality was 11½ per cent.

We were very much interested in trying to diagnose these cases early and in trying to make sure that no patients entered the hospital and remained any length of time without the diagnosis being made. We must remember that this question of pneumonia in a hospital of this sort is somewhat different from that in civil life, because every one in this particular community that has pneumonia enters the base hospital and enters

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 9, 10, 11, 1918.

it early, within a few hours after the initial chill. Up to the beginning of the year a great many of the medical personnel were inexperienced and we had to devise means of keeping track of these patients. So we early resorted to the x-ray and issued orders that every patient who went to the hospital with a diagnosis of pneumonia by the receiving officer would be x-rayed within twenty-four hours; that every patient entering the hospital where a diagnosis of bronchitis was made where a temperature of 100 was maintained for more than twenty-four hours, would be x-rayed. Then each morning at 8:15 o'clock we met, and all these plates were gone over. Often sixty chests were taken in a day. We were thus able to pick out the pneumonias and check up the diagnoses, and we were able to check up many cases of bronchitis as pneumonia. The x-ray is of great assistance here, we used it extensively because it was impossible for me to go over all the cases, but it was possible to see all the x-rays in suspected cases. So we feel that we have detected every case of pneumonia, and certainly numbers of them which, without the x-ray, would have passed along as simple cases of bronchitis, because it is quite surprising to see how much lung involvement you may have, especially if that lung involvement is central, without physical findings indicating consolidation; that is, you may have a mass as large as an orange, and yet the physical findings over that lobe may be a very slightly impaired resonance and suppressed breathing, perhaps no rales and no bronchial breathing. We kept records of all these cases to show what lobe was first involved. We had special opportunity for this because we caught all cases practically before the condition had extended from one lobe, and we located the disease not only by the symptoms, but by the x-ray. Two hundred fifty-five cases began in the right lobe and 253 in the left lobe. The upper left lobe was involved in twenty-three cases, the upper right in forty-five, and the entire lung was involved five times.

As I have said, in these early cases the infection was mild. Out of the first 120 cases eighty-eight had a typical crisis, and we determined as accurately as possible the day upon which the crisis occurred. It shows how frequently we get pneumonias, without treatment, running a course with all the clinical symptoms, and in forty-eight hours or more the patient may have his crisis. Of the eighty-eight cases with a crisis, seven had the crisis at the end of forty-eight hours; eleven at the end of three days, thirteen at the end of four days, thirteen at the end of five days, eighteen at the end of six days, nine at the end of seven days, ten at the end of eight days, and two

at the end of nine days, and there were five cases that run more than nine days. But the day on which the largest number of crisis occurred was the sixth, and more than half the patients had the crisis by the end of the fifth day.

With the streptococcic pneumonia we have not had crises.

We also try to determine the type of pneumococcus in these cases, as you know now, we have several types of pneumococcus, and if you intend to treat these cases by a serum it becomes necessary to know the type. And while not all our cases were typed, we found Type I, that is, the one amenable to the Rockefeller serum, in 16 per cent. of the cases, and Type II, in 46.8 per cent. of the cases. Then there comes Type III and Type IV, also very frequent. But Type I was comparatively infrequent, and later, when we come to speak of the treatment of pneumonia we will refer to the mortality in Type I.

In this group of 276 cases, there were 159 white soldiers and 117 colored soldiers. Inasmuch as we had forty cases of pneumonia before the colored troops came to camp, if we deduct those 40 from the 159 cases we find that we have 119 white soldiers with pneumonia and 117 colored. As the colored troops represented only about one-sixth of the total strength, this shows the greater frequency of pneumonia among the colored troops. The colored troops also showed a somewhat higher mortality, 13 per cent., while the white soldiers showed a mortality of 9 per cent.

Now we will pass to the question of the streptococcic epidemic. Epidemics of this character have occurred in other camps, in fact in most of the camps. As a rule the epidemic of streptococcic pneumonia in other camps has occurred with the complication of measles. At Fort Riley it developed about a week before it developed at Camp Dodge. After it developed at Camp Dodge it developed at Camp Grant and also at Camp Custer and possibly at other camps. At our camp and at Fort Riley the condition is not associated with measles. When any infection gets started in a camp it is easy to tell how it spreads. And while many theories have been advanced, as the theory of dust, of over-fatigue, of chill after drilling, although we examined these soldiers carefully trying to determine what the etiological factor might be, we were at a loss to find anything definite the men had done which led them to become susceptible to pneumonia. The most frequent factor was that the patient had had for some days bronchitis, and the next most frequent factor was the statement that for a week or more they had had a sore throat, indicating some mild

infection in the throat or bronchial tubes that may have preceded the more severe infection with the streptococcus.

These patients differed from the ordinary pneumonias inasmuch as they came in very sick, intensely toxic, and developed exceedingly early empyema, in fact in some cases patients who drilled the day previous came into the hospital with the chest half full of turbid fluid, loaded with streptococci. But in all cases the effusion developed early. We might again refer to the colored troops in this connection. It interested us to note how much more frequently the white soldiers with this streptococcic infection developed empyema. Empyema occurred in 45 per cent. of cases among the white soldiers, while among the colored people it developed in only 20 per cent. of the cases. Furthermore, the mortality, among those with empyema, was very great; 62 per cent. in the case of the white troops, while in the colored troops with empyema only 44 per cent. But here again, when we come to consider the deaths of those who died from pneumonia without complications, then we find a larger percentage of the colored troops died than of the white. For instance, of those cases in this epidemic without complications that died, there were 11 per cent. of deaths among the white and 22 per cent. among the colored. In other words, in this epidemic, where death was due to a straight pneumonia, it occurred twice as frequently among the colored troops as among the white. When we come to the presence of empyema, we find that the colored soldiers were not half as subject to it as the white soldiers, and when they had it the mortality was much less. Whether that was true at the other camps or not I do not know.

Going back to the progress of the trouble, the patients became intensely sick, with suppressed breathing and few subcutaneous rales, and frequently they failed to come to the point of bronchial breathing before the chest became partly filled with fluid. Therefore a definite consolidation frequently could be detected because the fluid accumulated so rapidly. Those who did not have fluid went on to a consolidation of the lung.

The difficulty of diagnosing the presence of fluid in these cases was quite marked. I think most of you feel as most of us have felt, that it does not require great skill in diagnosis to detect fluid in the chest. But we soon found out that this was not the case, because our results were checked up by the pathologist later, so that we became very careful in determining whether fluid was present or not. The explanation of this difficulty in detecting the presence of fluid in these

cases is not clear. In all the camps they have had those findings you would hear over the lungs—moist rales which seemed close to the ear—and yet that man might have a quart of fluid in the chest.

Another point is that in some cases, instead of a simple empyema there was a pocketed fluid with a great tendency to creep in between the upper and the middle lobe, forming a pocket there, or to collect in the mediastinum or in the pericardium, and, in not a few cases, a suppurative peritonitis. So we were dealing not with a simple empyema, but with multiple pockets of pus, usually confined to the thorax; that is, in only a comparatively few cases did we have pus in the peritoneum.

TREATMENT

Empyema—It is always assumed that these patients would develop empyema. Not only did we take an x-ray on admission, but we had a standing order that every patient have an x-ray taken every fifth day until the case terminated. We had a cart fixed so that the patient could be lifted with his mattress directly to the cart, wheeled to the x-ray room and the picture taken with the patient covered, and we saw no ill-effects from the trip to the x-ray room when these precautions are observed. Should we suspect fluid we made exploratory puncture with a small needle, and this might be repeated several times. After obtaining the fluid it was sent immediately to the laboratory and was almost invariably found to be a turbid fluid containing streptococci.

In spite of the experiences which doctors had previously had at other camps and in regard to which they had stated that early operation in these cases was not desirable, it seemed both to the surgical and to the medical staff that here was a fluid full of streptococci and that the resection of a rib under local anesthesia, with drainage, was indicated. So we used that method of treatment in these cases for several days, but we found that the results were not satisfactory. The patients would come back from the operating room in a state of shock, cold, clammy, and that persist until a fatal termination. So, after carrying this method of treatment out for about a week on thirty-two cases, we decided to aspirate the patient at least until the fluid became definitely purulent. Therefore since that time we have aspirated these patients until the fluid becomes definitely purulent. After the first three or four days those patients show great improvement; that is, if they do not die from the early effects of the intoxication they show great improvement. So by the time the pus becomes thick their condi-

tion is comparatively good, and then we have had the patient operated on by rib resection. In some the condition was so good under the aspiration that we have continued to aspirate, and we have three cases that we have cured on aspiration alone and several others that we hope may be cured without operation.

As to the treatment of these cases after the rib has been resected. We have kept them on the medical service. The surgeons have taken care of them in the way of dressing and surgical treatment, the medical service has taken care of them in looking after the general condition and trying to determine if draining well, whether additional pockets of pus were present or other complications threatening. We have used the Carrel-Dakin treatment, but it is too early to say what are the results.

General Treatment of Pneumonia—As regards the treatment of pneumonia as a whole: Pneumonia is treated, according to the instructions of the Surgeon General, as any other contagious disease. We have a placard on the door—"Contagious Disease—Keep Out." The number of cases in a ward is limited to thirty-two. There is suspended between the beds, sheets hung on wires so that it is impossible for a patient to infect another patient with a different type of pneumococcus. All nurses, surgeons and assistants wear mask, cap and gown. Visitors are admitted to the ward when the patient is very sick, and they always put on mask, cap and gown, with the idea first of all of protecting the nurses, assistants, surgeons and visitors from contracting pneumonia, and to prevent their possibly becoming carriers. And we have not had any case of pneumonia among the nursing corps or medical personnel, but one or two among the orderlies who have been working in the wards. Inasmuch as we have had in the hospital 200 bed patients with pneumonia at a time, it would seem that the protection we have given has been of value to the nursing corps and medical personnel. Then we have given our patients plenty of fresh air. We have not bathed them for temperature, believing that temperature is a protective measure and favors the development of immune bodies.

Then came up the question of using serum. Inasmuch as the question of the value of the Rockefeller serum has not been entirely determined, I requested the Surgeon General's office to inform us if we might use our camp as a control camp unless we found that the mortality from Type I was running higher than elsewhere. So we have not used the Rockefeller serum in any of our cases, yet in spite of that we have up to the present time had only three deaths from Type I; that is,

the type for which the serum is indicated. And I think this result compares very favorably with the results elsewhere where they have been using the serum. It shows first of all that Type I is not very frequent, and, second, that Type I is not very serious. If we had used this serum and had had only three deaths from Type I, we would have felt that we had accomplished considerable.

As to the routine treatment employed, we had standing orders which were very simple. The patient received fifteen minims of tincture of digitalis every three hours, and we had standing orders to give a hypodermic of morphin in case the patient had great pain or was unable to sleep on account of restlessness. Then in case the patient's heart became bad we gave camphorated oil. We used morphin for the control of coughing.

In straight pneumonias we had a mortality rate of 11.2 per cent. It is the streptococcus pneumonia which has been so serious. The epidemic is now dying out, we have less than half the number of pneumonia patients in the hospital, and fewer than at any time since the 20th of March.

In this connection I would like to mention the rumors that have been circulated as to what happens to patients at the Base Hospital. In every case of pneumonia we immediately wire the relatives that so-and-so has pneumonia at the Base Hospital, which gives them the opportunity to come if they wish to do so. We might think that a father or mother with a son who has been drafted, has gone to camp and contracted pneumonia and died, would show some resentment. It may interest you to know that, with one exception, not in a single case so far as I know have fathers or mothers or relatives of these patients complained either of the treatment the patient received or of the fact that the son developed pneumonia. Furthermore, I think you would all be surprised to know that we have practically no complaints from the patients themselves. This is in striking contrast to the condition found in the large city hospitals, largely because the soldiers are a different type of people—young, courageous, bright, anxious to do their best. But I think in a measure perhaps this lack of complaint on all sides has been due to the precautions we have taken. We have a large nursing corps, 220 nurses, so that with the maximum number of patients in the hospital, 1900 at one time, there is a nurse to about every seven patients. It really gives a nurse to less than seven patients because we do not have any nurses in the genito-urinary wards where we have about 250 patients. We have our wards well supplied with nurses, five in the day and two at night, besides three orderlies

during the day and two during the night. Then there is assigned a ward surgeon with nothing to do but to look after the patients in that ward. In the pneumonia wards without fail those men have been on duty, and when I make my rounds at 8:00 or 9:00 p. m. or even later, I have as a rule found those men in the wards working. Then also an effort has been made to show to visiting relatives every courtesy, we try to make them as comfortable as we can. We have no hotel at which they can sleep short of Des Moines, but we make them just as comfortable as we can at the hospital and up to the present time we have received from relatives only words of commendation. Any criticism that has arisen, has arisen from those who have not been in a base hospital or have not been intimately associated with patients in one of these hospitals.

We have splendid facilities for the care of these men. The wards are airy and light. Also we have an excellent laboratory with all kinds of laboratory work done, we can use our own x-ray plates, and this has been of much value in detecting early pneumonias and all sorts of complications.

I wish to extend to every one here an invitation to come down to the Base Hospital at Camp Dodge. We would be only too glad to show you around. First of all, you will all be very much interested in finding that it is impossible to run a civil hospital in the same systematic way as a military hospital. This would be instructive to you, and we would be greatly pleased to have you get first hand information in regard to the manner in which these boys have been taken care of.

THE PATHOLOGY AND DIAGNOSIS OF DISEASES OF THE HEMAPOIETIC SYSTEM*

WILLIAM E. SANDERS, B.S., A.M., M.D., Des
Moines

The pathologist bases his diagnosis upon the observed changes in the tissue elements which enter into the composition of the organ under consideration and this opinion implies an adequate understanding of the normal cytology of these elements.

He has not only to take into consideration the degenerative and reactionary changes observed in the perenchymatous cells of the organ but likewise those occurring in the connective tissue matrix of the organ, chiefly indeed of a regenerative nature.

When one essays to apply the same methods of study to the pathologic changes occurring in the blood he is confronted by great difficulty because the blood is not an organ but rather a very complex tissue in the production of which many organs are concerned, and it is only with the greatest difficulty that one can correlate the changes observed in the circulating blood with the pathology observed in the hemapoietic and hemophagocytic organs concerned in blood production and destruction.

Accordingly the classification of blood diseases has been established rather on the alterations in the peripheral blood than on the blood producing organs.

In the present paper I shall limit the discussion to the changes observed in the formed elements of the blood and from necessity must deal with these under general groups rather than in a more concrete way.

It must be recalled that the blood elements are very highly specialized cells which have lost their power of reproduction in the blood stream; whose life history is limited to a very few weeks at most, and which are being constantly destroyed and replaced by new elements with such marvelous adjustment as to maintain a constant number and ratio of all these elements in the circulation.

It follows, therefore, that deviations from the normal number and proportion of these various cells, may concern an increased or decreased production on the one hand, or an increased or decreased destruction on the other.

The ultimate factors which control these activities are unknown to us but I have on another occasion suggested that the presence of fatty acids, neutral fats and cholesterol in the blood stream might have to do with their regulation.

It is interesting to note in this connection that recent diatetic experiments leading to alterations in the blood cholesterol have shown that where the cholesterol is increased the polys rise and the lymphocytes fall and vise versa.

The previous paper has admirably reviewed the embryology, histology and histogenesis of the blood cells, most of which are formed in the bone marrow which belongs to the great connective tissue group of tissues, the special tendency of which is, under pathologic stimulation, a regenerative activity by reversion to more primitive cellular types.

Accordingly, one observes in certain blood diseases an approach to the infantile, and indeed, a reversion to the embryonic form of blood production, in which there is not only a transformation of fatty to red bone marrow, but the liver, spleen and hemolymph glands reassume their embryonic

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 9, 10, 11, 1918.

hemapoeitic function with the resultant mobilization of immature blood elements in the circulation.

So nearly universal is this tendency that one seems almost justified in assuming an essential unity differing only in degree, in the pathology of the so-called blood diseases regardless of their etiology.

Whether the various noxæ responsible for blood diseases act primarily as a stimulus to hyperplasia of the hemapoeitic tissues, or rather secondarily by a destruction of the circulation blood elements is uncertain, the certain facts speak for the latter assumption.

Among these may be mentioned the identity of the pathologic changes in the bone marrow observed in such diverse conditions as, hemorrhages, hemolytic anemias, the anemias of severe infections, and those from intestinal parasites and various toxic substances.

Similar lesions may be produced in animals by the use of various, not necessarily closely related, toxic and hemolytic agents, and by properly timed and regulated dosage, various stages of hyperplastic, and indeed, aplastic changes may be induced in the bone marrow with the resultant corresponding alterations in the circulating blood.

The primitive blood cell is a giant nucleated cell, megaloblast, which appears in the early embryo long before the differentiation of red and white cells.

A little later this gives place to a smaller nucleated cell, the normoblast, which is the mother cell of the non-nucleated red, the latter being the only one found normally in the circulating blood. Still later lymphoid cells appear and last of all the polynuclears.

In the embryo, various structures contribute to the formation of these cells, but in the adult under normal conditions all except the lymphocytes are the product of bone marrow activity.

The leucocytes of the normal blood are divisible into two groups, according to the presence or absence of granules in their protoplasm, possessing certain staining properties.

Those of a granular nature differ among themselves according to their affinities for neutral, acid and basic dyes, and the relative proportion of each of these is fixed within quite definite limits in health.

The immediate predecessors of each of these may be made out in the bone marrow, and frequently find their way into the circulation. They show the same staining properties but are usually mono rather than poly nuclear.

About ten per cent. of the leucocytes are free from the above mentioned granules and generally

possess a single or saddle bag shaped nucleus. These are known as the large mononuclears and transitionals and their origin and nature has been the source of a most spirited polemic for many years.

Cells somewhat similar, the myeloblast, free from these granulations are present in small numbers in the adult marrow and are the prevailing cell of the embryonic medulla.

The phenolase and peroxidase reaction is common to all the cells of myeloid origin and also the mononuclears now under consideration, and this with the apparent close relationship to the myeloblast in staining properties, and the fact that they are increased in diseases characterized by pathologic leukopoiesis leaves little doubt in my mind of their bone marrow origin.

There is no doubt that they are frequently confused with large lymphocytes as I shall show later in a case report.

All the cells above mentioned as occurring either in the adult or embryonic marrow are met with in the circulating blood in certain blood diseases, and many of them in various proportions in blood diseases of very different clinical types.

It is not alone in blood production but likewise in blood destruction that hemo-pathology is to be sought.

Under physiological conditions, certain phagocytic cells, notably of the spleen and bone marrow, take up and digest the senile and worn out cells from the circulation.

In the hemolytic jaundice and closely allied conditions, this function of the spleen seems to be overactive.

In the splenic anemia on the other hand, the spleen seems to elaborate some toxic substance which inhibits normal hemopoiesis.

In the so-called blood diseases the number, ratio and form of the cellular elements has served in the main as the basis for clinical classification, but when one recalls how much the cytology of the various blood diseases possess in common, he is struck with the essential unity in the pathology of all these conditions regardless of their etiology and becomes convinced that they are all secondary to other underlying conditions, hematologically but not necessarily fundamentally related.

Indeed it is no more necessary to assume a specific noxia for each of the various blood diseases than to make a like assumption for the various reactionary and reversional changes in other connective tissue elements where, regardless of the etiologic factor the pathology is essentially the same.

Considering the very close histologic and genetic relationship which exists between the red

cells and the leucocytes, it is not surprising that disturbances of one of these elements is commonly associated with disturbances in the other.

The anemias are commonly associated with leukopenia and most of the leucocytoses and leukemias sooner or later reveal disturbances in the reds.

We now seem assured that all the anemias are of a secondary character, and we are able to determine with certainty whether a given anemia is due to defective blood formation or excessive blood destruction.

All the hemorrhagic and hemolytic anemias are associated with hyperplastic changes in the bone marrow of a sufficiently advanced degree, and the nature of the blood changes is dependent upon the degree of activity manifest in the bone marrow.

In the aplastic anemias the activity of the *noxa* is so intense as to produce fatty degenerations rather than regenerative activities in consequence of which, notwithstanding the pronounced anemia, there is a total absence of embryonic blood elements in the circulating blood.

Here not alone erythropoiesis but leukopoiesis is much reduced.

Chlorosis, usually classed as a blood disease, is in reality a disturbance of metabolism, characterized by an excessive plasma formation, and is due to some fault in the function of the female genitalia.

There is nothing in the hemo-cytology nor the hemopoetic organs to justify its classification here.

In the polycythemias there is increased erythro and leukopoiesis and increased hemolysis of the red cells, with the productive element predominating. There is no evidence that the splenic function is primarily at fault.

Low grades of this condition can be produced by high altitudes, cyanosis, the administration of adrenalin and here again we find evidence that the blood condition is not the disease *per se*.

The mechanism for the production and mobilization of the leucocytes is evidently much more labile than that for the reds.

It is only necessary to mention in this connection the leucocytosis of digestion, and from thermal stimulation and the marvelous response to infections.

It is the myeloid leucocyte which shows the greatest variations in the different forms of intoxications and infections.

Here it is only necessary to mention the mononucleosis of typhoid, the neutrophilic leucocytosis of the pus infections, the eosinophilia of

intestinal parasites, and the basophilia of certain skin diseases.

In very severe infection not only these elements, but their immature predecessors, and reversional embryonic forms are mobilized in the blood stream from the hemapoietic organs. It is however in the leukemias that the greatest changes in the leucocytes, both normal and pathologic are encountered. It is only late in this disease that the red cells reveal many changes.

The nature of the leukemias are not at all well understood but the clinical course and the hemocytology show so many features common to infections that I personally believe them to be of this character.

Not infrequently cases are encountered where it is impossible to say from the blood examination which of the two conditions exist.

One of the greatest difficulties met with is in the differentiation of the so-called acute infective lymphocytosis, and the so-called acute lymphatic leukemia.

In fact without the peroxidase and phenylase reactions of the cells concerned it will sometimes be impossible to determine whether we have to do with the large lymphocyte or a rather small sized myeloblast with more or less admixture of the closely related Turck's irritation myelocyte, and what I have previously expressed as closely descendent from the myeloblast, viz., the large mononuclear and transitional cells.

In conclusion I shall cite a case which emphasizes the difficulties encountered in such conditions.

Case History—This concerned a young man twenty-six years of age, of good family and personal history whose illness began with symptoms of a cold soon followed by sore mouth characterized by spongy and swollen gums which failed to respond to the usual methods of treatment.

About two months after the beginning of the illness there was swelling of the lymph glands at the angle of the right jaw which was opened and from which a very little pus and blood is said to have been obtained.

The case came under my observation about four months after the beginning of the illness with a gingivitis, a moderate fever and a board-like swelling of the left floor of the mouth extending into the neck below the jaw. (Ludwigs angina.)

Notwithstanding thorough drainage the case progressed rapidly under the symptoms of profound sepsis, with hemorrhages from the nose, throat and intestines, and died within about a week after the beginning of the Ludwig symptoms.

Cultures from a small amount of pus secured at the time of operation showed pure *staphylococcus albus*.

There was no lymph gland swelling until a day or

two before death. The urine was negative, the spleen just palpable, and a soft systolic murmur was heard at the apex. The patient was well nourished but very pale, and the blood examination when he came under my care showed, hemaglobine 65 per cent., 2,000,000 reds, a few slightly stippled and slight anisocytosis.

The leucocytes were 11,000 and reached 23,000 the day before death. About 97 per cent. of these were classed as lymphocytes and this proportion was maintained until he died a week later.

The differential leucocyte studies were made with the Wright, Giemsa, and Hematoxyline and Eosine stains, but much to my regret not with the peroxidase and leucoprotease reactions.

With the methods at our disposal at the time we were all agreed that the predominant cell of the leucocytes was the large lymphocyte and that we had to deal with one of those unusual infective lymphocytoses, or possibly an acute lymphatic leukemia.

Neither of these conditions could we harmonize with the rapid infiltration of the cellular tissues of the neck and mouth for so far as we know lymphocytes under no conditions possess the property of extensive migration from the vessels as was evidently occurring in this case.

We believe therefore that these cells are the immature histological antecedents of the granular myelocytes, viz.; the nongranular myeloblast. Under such an interpretation the perplexing blood picture becomes very much simplified.

I am inclined to believe that the so-called acute lymphatic leukemias are of such a character.

In the following table about 80 per cent. of the non-granular cells are evidently myeloblasts, and if the case with a leucocyte count so low as this can be considered a leukemia at all, it is certainly the myeloid instead of the lymphoid type.

Only on such a conception can I bring the blood findings into harmony with the other clinical features, notably the enormous cellular infiltration of the floor of the mouth and the neck.

A study of 555 cells from various slides made at various times throughout the last week of the illness showed only three per cent. with distinct neutrophilic granules while the remaining 542 were classified as non-granular, the total numbers and percentages being as follows:

- Non granular cells, total, 97 per cent.
- Small nongranular lymphocytes, 51, 9 per cent.
- Large nongranular lymphocytes, 51, 9 per cent.
- Large nongranular mononeuclears (lymphocytes), 424, 77 per cent.
- Transitional (identified) (nongranular) 6, 1 per cent.
- Polymorphoneuclears (nongranulars) 7, 1 per cent.
- Neutrophile granulars, total 3 per cent.
- Large slightly granular mononeuclears (lymphocytes) 8, 1 per cent.

Polymorphoneuclear granular (leucocytes) 5, 1 per cent.

Eosinophiles and Basophiles 0, 0 per cent.

To summarize the points I have tried to make in this paper we may say:

1. That all blood diseases are of a secondary nature and the primary disease lies outside the blood and blood making organs.
2. There is an essential unity in the pathology of all blood diseases regardless of their etiology.
3. The pathology of the blood forming organs is of a regenerative and reversional nature common to the changes observed in other connective tissue elements.
4. The large mononuclear and transitional cells are closely related and probably descended from the non-granular myeloblast of the bone marrow.
5. The cases hitherto classed as acute infective lymphocytosis are in reality myeloblastic leucocytosis, and possibly the acute lymphatic leukemias are of a similar nature.

BIBLIOGRAPHY

1. Lehrbuch der Histologie. Ph. Stehr.
2. Monographic Medicine. Vol. iii.
3. Lymphocytosis of Infections. R. C. Cabot, Am. Jour. Med. Sc. Vol. cxlv, No. 3.
4. Lymphocytosen der Infektionskrankheiten. F. Marchand Deutsch. Arch. f. Klin. Med. Vol. cx. No. 3—4.
5. The Clinical Diagnosis of Acute Leukemic States. Barker. Baetjer & Miller. Southern Medical Journal. Vol. ix, No. 2, Feb., 1916.
6. Studies on the Mononuclear Cells of the Blood. F. A. McJunkin. Arch. Int. Med. Vol. xxi, No. 1, January, 1918.
7. Studies on Cholesterol. G. Luden. Jour. Lab. and Clin. Med. Vol. iii, No. 3.
8. Chronic Cryptogenetic Splenic Tumor. Jour. Iowa State Med. Society. Jan., 1916, W. E. Sanders.
9. A Case of Ludwig's Angina with Unusual Blood Findings Presented to Polk County Medical Society, January, 1917.

MODERN THERAPEUTIC ASPECTS OF DISEASES OF THE HEMATOPOIETIC SYSTEM*

F. J. ROHNER, M.D., Iowa City

Until the etiology of the various diseases of the hematopoietic system is better understood, modern additions to their treatment are going to be more or less experimental. Therapeutic fads spring up and have their day and others take their place. As so many of these diseases present spontaneous remissions, the treatment last tried before a remission is often given undue credit. For a time, focal infection and auto-intoxication were considered as points of attack in the treatment of these diseases, as they have been of practically every disease under the sun with an unknown or obscure etiology. It is not the role of this paper to belittle the part that foci of infection undoubtedly play in many diseases, and I feel that in all

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 9, 10, 11, 1918.

obscure conditions and diseases, the patient's conditions permitting, the treatment of all foci of infection should be carried out. But nothing should be promised the patient as a result of such treatment.

Of the more modern additions to the therapy of the diseases affecting the hematopoietic system, the ones now in the limelight are: splenectomy, blood transfusion, roentgen ray, radium, and benzol. I shall, for the sake of brevity, and also, to make this paper as practical as possible, try and confine myself to a consideration of the above therapeutic measures only as they have a bearing upon the diseases or conditions affecting this system.

SPLENECTOMY

In Pernicious Anæmia—Because of the marked beneficial results following splenectomy in splenic anæmia (Banti's disease) and hæmolytic icterus, Eppinger, in 1913, was led to try it in pernicious anæmia. He reported very favorable results. About this same time, and working independently, De Costello and Klemperer, reported good results following splenectomy. Krumbhaar¹, in a review of one hundred and fifty-two cases of splenectomy in pernicious anæmia, found that apparently 20 per cent. died in six weeks; a distinct improvement occurred in about 65 per cent., and no improvement in about 15 per cent. A few of the cases were in good condition two years after splenectomy. He concluded as a result of his review, that splenectomy was not only a justifiable, but an advisable procedure in this condition. Le Minot and Vincent², say that splenectomy does not alter much the essential course of pernicious anæmia. McClure³, in a study of six cases of splenectomy with blood transfusion says, "I feel that life may be indefinitely prolonged under systematic transfusions of blood and splenectomy." Percy⁴, in 1917, reported twenty-four cases which had been operated upon six months or more previously. He claims that 87 per cent. were markedly improved with remissions lasting from six to thirty-two months. It might be of interest to mention that the gall-bladder or appendix was found diseased in 84 per cent. of his cases; these conditions were also treated. Of his last nine cases, bacteriological studies were made of the infected organs, and in many of the cases, a hemolytic streptococcus was found. Percy emphasizes three main factors in the treatment of pernicious anæmia: first, massive transfusions of whole blood; second, splenectomy; and third, removal of all

possible foci of infection. Balfour⁵, in an extensive review of the surgery of the spleen, expresses himself as follows: "That splenectomy in pernicious anæmia will affect a more prompt and prolonged remission of symptoms than has been possible under previous methods, is the opinion of the majority of those who have been in a position to observe large series of cases (Cabot, Moffit, Krumbhaar, Percy and others), but there is as yet no proof that splenectomy will cure the disease or even bring about a permanent arrest of symptoms. Despite encouraging earlier reports, it is found as time goes on, that in many of the primary cases, there are recurrences or that in some instances, the patients have died, so that the value of splenectomy becomes increasingly dubious. The present status of splenectomy in pernicious anæmia as indicated in the reports from various sources is as follows: first, the operation has no place in advanced stages of the disease; second, under certain conditions, the operation may be justifiably advised, *i. e.*, when the patient is not beyond middle life, gives only a short history of the condition, the anæmia is moderate in degree, the spleen enlarged, the skin icteroid, and there is a definitely high hemolysis. Nothing more than a temporary remission can be promised."

In Secondary Anæmias—Splenectomy in secondary anæmias associated with an enlarged spleen, particularly cases of hemolytic jaundice and in the early stages of splenic anæmia (Banti's disease), seems to be almost specific so excellent are the results. It is possible that some of the most favorable results reported following splenectomy in pernicious anæmia might really have been cases of hemolytic jaundice.

In Splenomyelogenous Leukemia—Miller⁶ states that splenectomy has been employed in a few cases with disastrous results. Because of the associated drop in the leucocyte count, along with a reduction in the size of the spleen with the use of benzol, x-ray, or radium, or a combination of two or more of these agents, renewed interest in splenectomy has been aroused. According to Balfour, since October, 1916, seventeen splenectomies have been done in cases of splenomyelogenous leukemia at the Mayo Clinic. The blood picture was first brought to normal by the use of benzol, x-ray and radium. No operative deaths occurred. It has been considered too soon to report the final results in these cases. In view of the fact that the bone marrow is involved, as well as the spleen, in this disease, makes splenectomy seem rather irrational.

1. Krumbhaar—J. A. M. A., vol. lxvii, p. 723, 1916.

2. Lee-Minot-Vincent—J. A. M. A., vol. lxvii, p. 719, 1916.

3. McClure—J. A. M. A., vol. lxvii, p. 793, 1916.

4. Percy—Surg. Gyn. and Obs., vol. xxiv, p. 533, 1917.

5. Balfour—Surg. Gyn. and Obs., vol. xxvi, 1918.

6. Miller (Musser and Kelly)—Vol. iv, 1917.

BLOOD TRANSFUSION

In recent years, there has been a revival in the interest of the transfusion of blood, and much work has been done in simplifying its technique and in eliminating many of its dangers. The history of transfusion is well presented by McClure and Dunn⁷. The direct method has given place to the more simple and satisfactory indirect methods, among which may be mentioned, the syringe canula method of Lindeman⁸, Unger's⁹, two syringe four-way stop-cock method, the paraffin tube method (Kimpton-Brown tube) as described by Mason¹⁰, (Kruscher's¹¹ modification seems a distinct improvement), and the sodium citrate method as used by Lewisohn¹². Personal preference is shown for the latter method—there is little, if any, danger of blood clotting during transfer; it is claimed to be as efficient as the other methods. The small amount of sodium citrate necessary to prevent clotting is non-toxic (Garbot¹³), the coagulation time of recipient's blood is not delayed (Lewisohn), and post-transfusion reactions are no more frequent than with the other methods, (Meleney, Stearns, Fortuine, Ferry¹⁴).

For some years, it has been known that human bloods were not all compatible. Most of the serious and fatal results of transfusion have been due to agglutination or hemolysis. It was discovered by Moss¹⁵ that hemolysis was always preceded by agglutination (but agglutination is not necessarily followed by hemolysis), so that whether bloods are compatible or not, as far as agglutination or hemolysis was concerned, it was only necessary to test them for agglutination. Moss found that human blood could be divided into four groups as regards their properties of agglutination, and that after the age of ten or twelve, a person remained permanently in the same group. Knowledge of this fact makes it possible to have on hand, or subject to call, a number of willing donors. The technique of grouping is very simple, especially as modified by Brem¹⁶. By a recent suggestion of Moss¹⁷, it has been made still more simple; the test requiring not over thirty minutes, and no special skill. It almost goes without saying that donors should be

healthy individuals with negative Wassermanns. If at all possible, the donors should be of the same group as the recipient. In a pinch, a donor might be used whose serum is agglutinative for the recipient's corpuscles, but never the reverse. The most incompatible combination of all would be one where the blood of the donor and recipient are mutually agglutinative.

Some doubt as to the permanency of a person's grouping has arisen as a result of the findings of Colonel Bond. In the *British Medical Journal*, March 2, 1918, he reports two instances in which in one following an acute infection and in another following acute nephritis, the bloods changed to a different group. In view of this, it is well where time permits to be doubly sure that the bloods of recipient and donor are compatible by testing them again just before transfusion.

The indications for and the value of transfusion in diseases of the hematopoietic system, based upon a review of the reports of the following contributors: Ottenberg and Libman¹⁸, McClure and Dunn¹⁹, Dorrance²⁰, Meleney-Stearns-Fortuine-Perry¹⁴, Robertson and Watson²¹, Giffin²², Percy and others, is as follows:

In pernicious anæmia, it certainly will not cure. In a small percentage of cases, a remission may be initiated, and in a fairly large percentage of cases, a temporary improvement follows, lasting from a few days to a few weeks. Unless due to improper grouping, it is seldom harmful, although recently the experiments of C. H. Robertson²³, have shown that too large or too often repeated transfusions may be harmful. He gave repeated transfusions to rabbits until a condition of plethora developed. In a few rabbits, a rapid subsequent anæmia occurred.

Our own limited experience with transfusion in pernicious anæmia at the State University of Iowa Hospital has not been encouraging. We have done twenty-three transfusions in six cases of pernicious anæmia. In each instance, the donor and the recipient have been in the same group. Where good results did not follow transfusion with one donor, a different donor was tried. The greatest number of transfusions given in any one case was eight. The amount of blood transfused varied from three hundred and fifty cc. to one thousand cc. Slight, but in no instance a severe reaction followed in a few cases. Following practically all transfusions there was a

7. McClure and Dunn—*Bulletin of Johns Hop. Hosp.*, vol. xxxviii, p. 99, 1917.

8. Lindeman—*A. J. of D. of Child.*, vol. vi, p. 28, 1913.

9. Unger—*J. A. M. A.*, vol. lxiv, p. 582.

10. Mason—*Surg. Gyn. and Obs.*, vol. xx, p. 737.

11. Kruscher—*J. A. M. A.*, vol. lxx, p. 223, 1918.

12. Lewisohn—*Surg. Gyn. and Obs.*, vol. xxi, p. 39.

13. Garbot—*J. A. M. A.*, vol. lxvii, p. 1443.

14. Meleney-Stearns-Fortuine-Perry—*A. J. of M. S.*, vol. cliv, p. 733, 1917.

15. Moss—*Bulletin of Johns Hop. Hosp.*, vol. xxi, p. 63, 1910.

16. Brem—*J. A. M. A.*, vol. lxvii, p. 190, 1916.

17. Moss—*J. A. M. A.*, vol. lxviii, p. 1905, 1917.

18. Ottenberg and Libman—*A. J. M. S.*, vol. cl, p. 36, 1915.

19. McClure and Dunn—*Bulletin of Johns Hop. Hosp.*, vol. xxviii, p. 98, 1917.

20. Dorrance—*A. J. of M. S.*, vol. cliv, p. 216, 1917.

21. Robertson and Watson—*Annals of Surgery*, vol. lxvii, p. 1, 1918.

22. Giffin—*J. A. M. A.*, vol. lxviii, 1917.

23. Robertson—*J. of Ex. Med.*, vol. xxvi, p. 221, 1917.

temporary increase in hemoglobin, red blood cells, and leucocytes. The temporary improvement lasted but a few days. In only one case, and that after the third transfusion, did a remission follow.

In secondary anæmia, the results are usually very encouraging. In hemorrhage, the benefits are marked—often life-saving. Robertson and Watson, in a series of thirty-six cases of primary hemorrhage, considered transfusion life-saving in twenty-two. In six transfusions, in five cases of severe or repeated hemorrhages at the University Hospital, two cases seemed to owe their lives to the transfusion; two patients stood operation well who were considered very poor risks before transfusion, and one case with repeated internal hemorrhages stopped bleeding after the transfusion.

In cases of bleeders with delayed coagulation time, and hemorrhages of the new-born, transfusion is almost specific. Very excellent results are reported in hemophilia.

BENZOL

Of the more recent drugs used in the therapy of diseases of this system, most mention should probably be made of benzol, first introduced by Koryiana in 1912. It is indicated in the leukemias, either alone, or better in conjunction with the use of x-ray and radium. Benzol should be given in gradually increasing doses, beginning with from five to ten minims after meals. It is best tolerated if given with equal parts of olive oil in keratin or salol coated capsules. The dose should seldom be increased to over twenty minims. Cases should be under constant observation and the drug discontinued when the white blood cells reach twenty thousand, or, if toxic symptoms occur. The toxic symptoms are: gastro-intestinal disturbances, headache, dizziness, skin eruptions, bronchial and kidney irritability and hemorrhages. Marked leukopenia with increasing anæmia and death may occur. Boardman states that sixteen out of one hundred cases failed to show improvement and that another eight cases, although reacting favorably at first, died soon after the discontinuance of the treatment. Life probably can be prolonged, but the disease is probably never cured by benzol.

Thorium-X has been used in leukemia, but so far conflicting results have been reported.

Salvarsan has had its day in the treatment of pernicious anæmia and except in a few cases in which syphilis has been associated with the anæmia, it has proven no better than Fowler's solution. Arsenic in the form of sodium cacodylate or atoxyl hypodermically may be substituted

for Fowler's solution where the stomach will not tolerate arsenic.

X-RAY AND RADIUM

X-ray and radium will probably hold a permanent place in the therapy of leukemias. Good results are reported in the use of either alone, but best results are probably obtained in a combination of the two with benzol. Cases are reported in which the treatment with x-ray and benzol failed, but which responded to the treatment with radium, Ordway²⁴. It is doubtful if cures can be brought about by the treatment, but striking drops in the leucocyte count and diminution in the size of the spleen and improvement of the general health frequently occur. I wish to report two cases recently so treated at the University Hospital.

Case 1—Miss R. referred by Doctor L. P. Rich, Freidrichsburg, Iowa. The patient is a white woman, twenty-nine years old, single, housekeeper. Her first symptoms were those of Menieres' disease. In July, 1916, she had a sudden attack of dizziness in which she fell and similar attacks in November, 1916 and February, 1917. In December, 1915, she began to feel weak and run down, and complained of a ringing in her ears. About this time, she had diarrhea for one week followed by severe dizziness, nausea, and vomiting, which symptoms have been present more or less continuously ever since. In September 20, 1917, Doctor Stafford discovered an enlarged spleen and a blood examination cinched the diagnosis. She entered the University Hospital October 10, 1918. Physical examination showed a slender, pale, white woman of stated age. The spleen was moderately enlarged and reached five cm. below and four cm. to the right of the umbilicus. Blood examination showed hemoglobin 50 per cent., wbc 642,000, rbc 1,750,000, myelocytes 29 per cent. She was put upon Fowler's solution 3 min, t. i. d., benzol 8 min., four times a day increasing to 10 min. She received seven treatments to the spleen with radium by the cross-fire method at one to two day intervals in doses ranging from one hundred to one hundred and fifty mg. hrs., or a total of one thousand mg. hrs. She left the hospital against advice November 1, 1917. Her blood then showed hemoglobin 48 per cent., rbc 2,400,000, wbc 648,000; apparently not improved. She returned to the hospital December 7, 1917 when her blood examination showed hemoglobin 50 per cent., rbc 1,986,000, and wbc 374,000, the leucocyte count being about one-half what it was when she left the hospital. As is usually the case, the leucocyte count continues to drop for some time after treatment is discontinued. She was again put on benzol and radium, and in addition, x-ray therapy. In two weeks, the blood count showed the wbc had fallen to 30,600; the benzol was then discontinued. In another two weeks (January 16, 1918), the leucocyte

24. Ordway—Boston M. and S. G., vol. clxxvi, p. 490, 1917.

count had dropped to 8,000, the rbc increased to 3,200,000 and the hemoglobin to 62 per cent. The spleen was markedly decreased in size, then reaching but two fg. breadths below the costal margin. In this second admission, from December 7, 1917 to January 18, 1918, she received on alternate days (Sundays excluded) by the cross-fire method, either radium or x-ray treatment up until January 10, 1918. In all, she received seven treatments with radium, a total of 1500 mg. hrs., and twenty-one treatments with x-ray. The dosage of x-rays will be mentioned later.

She was seen by Doctor L. W. Dean who reported a marked neuro-retinitis, vestibular functions gone; true Menieres' disease.

Case 2—Miss S., school teacher, single, twenty-three, referred by Doctor Taylor Jackson, Albia, Iowa. She first noticed an enlargement in the upper left abdomen in July, 1917. She had no complaints whatever, but gave a history of profuse epistaxis in the summer of 1916 and again in the summer of 1917, attacks coming more often in October and in November. She entered the University Hospital November 13, 1917.

P. X.—The patient is a slender girl of stated age; color is good; the spleen markedly enlarged reaching two fingers breadth below and about one finger's breadth to the right of the umbilicus. Blood examination shows hemoglobin 50 per cent., rbc 4,350,000, wbc 479,000, and myelocytes 60 per cent. She was put upon Fowler's solution and benzol, radium and x-ray. She received during her month in the hospital, five treatments with radium, cross-fire method, with a total of 1075 mg. hrs., and sixteen x-ray treatments. December 4, three weeks after admission, benzol was discontinued. Leucocyte count was then 14,800. December 11, the other therapy was stopped. She was discharged December 12, with the blood showing hemoglobin 70 per cent., rbc 3,890,000, wbc 7,200. The spleen reached 1.5 fib. below the costal margin. Since discharge, she received one treatment in January and another in April, 1918. Her spleen is again considerably enlarged and her blood count, April 13, was hemoglobin 78 per cent., rbc 3,800,000, wbc 121,000. She was advised to return to the hospital for further treatment, but has failed to do so.

TECHNIQUE OF ROENTGEN AND RADIUM THERAPY AS USED AT THE UNIVERSITY HOSPITAL BY DOCTOR BUNDY ALLEN

Röntgen Therapy—1. Standard transformer.

2. Broad focus Coolidge tube backing up a nine inch spark gap, four to eight milliamperes of current.

3. Rays filtered through 3 mm. of aluminum and one layer of sole leather.

4. Splenic area marked off into two inch squares.

5. A different square was treated on each exposure. Length of exposure five to ten minutes

duration. By this cross-fire method, stronger and often repeated raying to the spleen can be made with the least damage to the skin.

Radium—Where radium is used, the cross-fire method was also followed, and the dosage measured in terms of milligram hours. The soft rays are eliminated by filtering through silver 3.3 mm.; brass 1 mm.; rubber 2 mm., and gauze thirty-five layers. We have at our disposal 50 mm. of radium. Fifty mg. for one hour is spoken of as 50 mg. hours, for two hours 100 mg. hours, etc. In the two cases just mentioned, 100 to 300 mg. hours were given at a treatment. The bones were not treated. The amount of radium or x-ray therapy is governed by the general reaction, local skin changes, blood count, and size of spleen.

X-ray and radium are of value in pseudo-leukemias and good results have been reported in polycythemia.

CONCLUSIONS

Splenectomy—While of decided value in hemolytic icterus and splenic anæmias, is of no permanent value in pernicious anæmia. In splenomyelogenous leukemia, a disease as its name implies involvement of the bone marrow as well as the spleen, makes splenectomy seem an irrational procedure.

Transfusion with its simplified technique is a live-saving measure in hemorrhage and is of decided value in many secondary anæmias. In hemophilia and other conditions associated with a delayed coagulation time, it is very helpful and at times might be almost considered specific. In pernicious anæmia, temporary benefit may follow, but results for the most part are discouraging.

X-ray, Radium and Benzol are valuable modern additions to the therapy of the leukemias, and while not curative may, with judicious use, lengthen considerably the life of those so unfortunately afflicted.

Discussion

Dr. Walter L. Bierring, Des Moines—It was a happy thought of the Chairman of the Section on Medicine to arrange this interesting symposium on these disease conditions, because it has brought out a most comprehensive collection of papers and at the same time it emphasizes the manner in which we have approached the study of this subject. You will notice by all the papers that the analysis of diseases of the hematopoietic system rests almost wholly upon a study of symptoms to determine the condition from a clinical viewpoint, and while our conception of the condition itself perhaps as regards its clinical expression is very much clearer than it was, our knowledge of the etiology or even an explanation of these changes is still very indefinite and in-

complete. Dr. Glomset, before he entered the military service, made a very careful study of sixteen human embryos, by serial paraffin sections with regard to the development of the blood. I am sorry he is not here because he could explain these changes much better than I can. It is an interesting fact that in the literature on the subject there is recorded only one similar research, limited to a much smaller number of human embryos; hence, practically all we know of the embryology of the blood is the knowledge that has been gained through the study of embryos of lower animals. Many of the facts brought out by Dr. Glomset show conclusively that the blood cells are seen in organs such as the liver, long before they reach the marrow. Dr. Sanders very graphically cited to us the pathologic and diagnostic data, particularly with reference to the blood picture changes. And that is our best criterion in these conditions. I would like to ask Dr. Sanders whether his case of Ludwig's angina did not terminate as a form of acute leukemia. The blood picture would seem to suggest that. I know you all appreciate the conservative attitude of Dr. Rohner in his conclusion with reference to the different methods of therapy, particularly as to the limited use of splenectomy in pernicious anemia. We are all familiar with the virtue of benzol and the x-ray in leukemia, and the considerable benefit in the use of transfusion in pernicious anemia, at least in prolonging remissions. It has been well expressed that transfusion in a sense is an appetizer, for it stimulates the appetite and promotes longer remissions, and as we are dealing entirely with symptoms both in our diagnosis and our treatment it does seem that anything that will modify the symptoms in this group of conditions is surely producing a benefit. While the prognosis in most of them is still very unfavorable, we are led to be encouraged by the fact that with the use of transfusion and other methods that have been in vogue, we will at least promote a state of well-being and in some instances a greater length of life.

Dr. Koch—An important fact that has been brought out by Dr. Bierring in connection with types of blood diseases, particularly pernicious anemia, is that many of these conditions are a reversion to the embryonic type, and it is a point that we wanted to bring out in considering the etiology of these diseases. This factor was emphasized many years ago by Ehrlich. Another point that has been emphasized by Dr. Bierring is that pernicious anemia is on the increase, and therefore it behooves us to busy ourselves with the study of these conditions, because one can go to almost any medical center and see these cases in the various hospitals.

Dr. Sanders—Replying to Dr. Bierring's interrogation, personally I believe that the acute lymphatic leukemias are very closely associated with the reactionary blood changes observed in acute infectious diseases. There is no line of distinction between the changes observed in infections associated with anemia, and those observed in the so-called lymphatic leukemias. Personally I am convinced that

in acute lymphatic leukemia, where there are present the so-called large lymphoblasts and the large lymphocytes, these are not real lymphatic cells at all, but that they are myeloid elements. In support of this view we have the nature of the infection, the clinical history of the cases, the short duration, and the response which these myeloid elements show to other infections, as well as the lymphoblastic properties of the cells lying between the myeloblasts and the large lymphocytes, viz.: The large mononuclear and transitional cells. From all this evidence I believe that we have present the myeloid element instead of the lymphoblastic element. There is no line of distinction between an infective leucocytosis and a leukemia. There are many cases in which the blood studies and the clinical history will not differentiate the two conditions. Various hematologists will differ in their interpretation of the cells. In the last few years Barker, Baetjer and Miller have reported a number of so-called leukemic conditions in which they were unable to differentiate between infective conditions and the condition of acute lymphatic leukemia. So I feel sure that as time goes on and we know more about these diseases, we shall finally come to the conclusion that they all belong essentially within one group, that the pathologic basis is essentially identical whatever the etiology may be. In the leukemias there is certainly strong evidence to believe that they are simply infections.

Dr. Rohner—I have nothing to add except to say that the modern treatment of these conditions does not offer very much more than the old treatment as recommended in the various texts. Except for the value of transfusion in hemorrhage and some secondary anemias (possibly sometimes in pernicious anemia), and the prolongation of life by the x-ray, radium, and benzol in leukemia, little of value has been added to the modern therapeutics of diseases of this system.

SOME OF THE LATER PHASES OF POINTS IN TUBERCULOSIS*

J. W. KIME, M.D., Fort Dodge

Diet—The chapter on diet in tuberculosis has been entirely rewritten. The forced feeding of milk, meat, eggs and other foods so much proclaimed a few years ago has been found productive of harm rather than of good. Frequent meals, five or six per day, overtax the digestive tract and in the end defeat the very object for which forced feeding was introduced.

At the present time tuberculous patients are sensibly fed on sensible foods, and, except in special cases, this class of patients is fed very much after the manner of the normal man—upon an abundance of good wholesome food, including

*Read before the Sixty-seventh Annual Session, Iowa State Medical Society, Fort Dodge, May 9, 10, 11, 1918.

vegetables of all kinds, meats, eggs, milk and ordinary articles of diet. Lunches between meals are usually discarded as it is now recognized that the interference of lunches with a good appetite at meal time does more harm than good.

We have learned that we cannot use the scales alone for prognostic purposes. A well fed patient may gain in weight for a time even while his tuberculous process is extending more widely through his lungs.

Rest and Exercise—Rest and exercise are two of the most difficult chapters in tuberculosis and more failures may be attributed to their misapplication than to any other feature in the management of this disease. Rest is perhaps the one most important feature in the treatment of the tuberculous patient. It is the most frequently violated principle in the management of every consumptive patient. We have long known that it is most important to hold the tuberculous joint in a state of absolute rest and immobility, but we have even *insisted* upon the pulmonary patient expanding his lungs by forced inspiration.

The more nearly the surgical principle of absolute rest may be applied to the tuberculous lung the better the chances for recovery. The lung must be held at rest—a condition that is clearly an impossible one, yet we may approximate to it. With the patient at rest in bed the demands upon the lung are reduced to the minimum; the frequency of respiration is lessened and the respiratory excursions are diminished.

Hence absolute rest must be enjoined for every case of active pulmonary tuberculosis; and every pulmonary case is active if there be an increased heart rate or increased temperature above the normal. And yet the time was, and not very long ago, when we said to the consumptive patient, "Go West and ride a broncho." And some of us have scarcely passed the broncho stage as yet. We are still perilously prescribing walks and rides, forced breathing and lung expansion, for the lung which should be firmly held by a plaster cast.

Rest, rest, rest is the word I want to drive home in your minds today. The lives of your patients depend upon the thoroughness with which you apply this principle in the management of this most obstinate disease.

It must be borne in mind that positive and permanent harm may arise from slight indiscretions in taking too much exercise. Cases advancing toward recovery are frequently returned to the unfavorable classes from this cause. Those approaching recovery may lose all they have gained and with it their chances for life by too great activity. Careful daily supervision by

trained attendants is necessary to guide the patient along the lines of safety and in the direction of recovery.

Just now the tendency everywhere is to increase the hours, and days and months, of rest in the treatment of our tuberculous cases and our results are better than they have ever been before.

This discussion of rest to the lung very naturally brings us to the important subject of lung fixation—of the application of splints to the affected lung.

Artificial Pneumothorax—The injection of nitrogen gas into the pleural cavity on the affected side, as recently advocated by Murphy and now practiced by many specialists in this field. There can be no question that the principle is right, and I believe that the method will grow in favor, but the subject has again so recently been brought to prominent notice that it will not be dwelt upon today.

Onset—It has not yet been sufficiently impressed upon the professional mind that tuberculosis very frequently first manifests itself almost as acutely as pneumonia and later assumes the chronic type or continues as an acute tuberculosis until the end. In most of these cases a diagnosis of pneumonia or typhoid has been made.

Climate—Climate is becoming better recognized by the profession as to its real value in tuberculosis. It holds a place secondary to sanatorium care. While there are some climates that are better than Iowa for some cases of tuberculosis, the mistake is usually made of sending these sufferers to a climatic resort without first arranging for sanatorium care in the desired climate. If either the climate or sanatorium care is to be omitted it is far better that climate be the factor to be omitted. It is little short of criminal merely to say to a patient, "Go West."

Sunlight—Sunlight in all forms continues to grow in favor in the treatment of tuberculosis.

The work of Rollier of Leysin in surgical tuberculosis of children has lent much impetus to solar therapy. There can be no question but that extensive use of sunlight is of material benefit in the treatment of tuberculosis in its various forms.

Owing to the fact that we are holding our present session at Fort Dodge, you will more readily understand the particular methods we pursue in the use of light, by a few words of description here. It is our theory, supported by many years of practice with these methods, that a very strong concentration of sunlight is even more beneficial in its effects than ordinary sunshine. In glandular tuberculosis and in lupus the changes are so

noticeable under the light that there is no room for doubt.

There is a limit to which sunlight may be concentrated for therapeutic purposes, and we have found this to be at a temperature of about 400 degrees Fahrenheit. Sunlight of this temperature when filtered through violet glass becomes sufficiently cold that it may comfortably be borne upon the bare chest or body of the patient. The actinic rays are thus retained in their intensity. Should the weather be clear during our session here we shall take pleasure in demonstrating this method of the use of sunlight at 1:00 p. m. each day, at which time the sun is at its maximum strength and is in daily use in the treatment of cases of this class. The method here used, while originated by us, is now in use in sanatoria both in this country and abroad.

Athletics—I cannot refrain from urging upon the profession the place which athletics holds in filling our sanatoria with tuberculous patients. It is one of the feeders of our tuberculosis institutions. Loomis Sanatorium has found that 7 per cent. of its patients is found among those who are known as athletes and have had severe athletic training. All the institutions in the country that have kept records along these lines agree that this figure is none too high.

Calisthenics and physical training are most helpful while athletics of strenuous character can only be condemned from the standpoint of the phthisiologist.

Management—There is perhaps no disease upon which results are so dependent upon the management of the case as in tuberculosis. It is necessary constantly to know precisely what the patient is doing and to know that he is doing the right thing all the time. This makes home care and treatment almost impossible of success. I believe that but few cases recover under home treatment. We see it over and over again in patients in the sanatorium that have steadily progressed toward recovery and in attempting to carry out the same details of treatment at home have completely failed. It is so easy to break up the necessary routine which must be continued for a long period of time in most cases, that it is seldom carried out with that scrupulous exactness that it must be to accomplish a cure in this disease.

That the patient's chances for recovery under sanatorium care are vastly better than when left to themselves under home care is becoming more and more apparent to the profession.

Constant medical supervision is absolutely essential to recovery from tuberculosis. Every patient who has a reasonable show for arrest of his

disease should be given the benefit of sanatorium treatment and regime. He should remain sufficiently long at least to learn definitely the methods of treatment and it would be far better for him to remain until entirely cured. It is the early ease particularly that may be cured. But left to themselves they rapidly become the advanced cases.

I desire now briefly to discuss the most important problem before us in relation to the suppression of tuberculosis.

Segregation of the Consumptive Patient—Wherever the greatest provision has been made for the institutional care of tuberculosis, there the death rate from this disease has been most reduced.

It is a peculiar fact that the death rate from tuberculosis began materially to drop before the cause of this disease was known and before the sanatorium method was invoked. As far back as 1850 the reduction in mortality in England began to manifest itself and since that time the death rate has fallen 54 per cent.

It was by accident that it was learned that by taking consumptives out from among the general population, the mortality from this disease was lessened. England, under her poor laws, removed all sick paupers to the almshouses, and, as tuberculosis soon pauperized its victims, the result was that consumptives were soon congregated in considerable numbers in the almshouses while they were reduced among the people at large.

Of this knowledge thus acquired we have failed to profit most. If by isolating consumptives we can cut the mortality in two, isolation at once becomes the most available weapon we can apply. This we have failed to do.

The reduction in the death rate from tuberculosis has been greatest and most rapid in England; England has given more attention to isolation of consumptives than any other country in the world. Scotland has adopted a plan very similar to that of England and her death rate from this disease has fallen 43 per cent. since 1866.

Poor, unfortunate Ireland has done practically nothing to combat the ravages of tuberculosis, with the result that the disease has actually increased 18 per cent. since 1866.

It is now known that practically all infections take place early in life, the large majority of them occurring before the age of five years, and that 90 per cent. of them are of human origin: also that most of these infections take place within the family. We know that practically all the tuberculosis of today comes from the human cases of tuberculosis of yesterday, and that the

tuberculosis of tomorrow will come from the consumptives of today. If we might, then, surround our present consumptives and their families with an impregnable wall we would eliminate a large portion of the tuberculosis that must appear in the second generation after us.

Infection is the one important agency in tuberculosis. The consumptive infects the home and the children in the home; he moves from house to house, leaving a trail of death behind him. Other families move into the places he has occupied and the children become infected and later lose their lives. House after house thus becomes infected and the older the house the greater the likelihood of its infection.

In our propaganda against tuberculosis we have avoided the subject of isolation. We have dealt largely with little things, hesitating to move directly against the infecting agent as has been done in dealing with all the pestilences which have yielded to attack. We have employed methods wholly at variance with those employed against leprosy, the plague, yellow fever and other great pestilences now happily almost wholly of the past. We permit consumptives to mingle freely with children, to sleep with them, to kiss and fondle them, while all the time we know that tuberculosis spreads in just this way and that for thousands of years it has been more deadly than any pestilence which has swept the earth.

The consumptive in the home is just as deadly as the leper in the home. The one we banish from our sight, the other we clasp fondly to our hearts. With the knowledge we have of this disease, and of its infective nature, we are guilty of constructive manslaughter, at least, if we do not make men see that this malady must be dealt with by means no less severe than those we always have employed in the suppression of other plagues.

The advanced and dying consumptive in the home is the one factor in tuberculosis above all others, and so long as we are afraid to attack this problem at its fountain head it is folly to predicate the ultimate elimination of tuberculosis from our midst.

We hear much about phthisophobia and it is always decried. I want to say here that an intelligent phthisophobia is the one thing that will save us. The consumptive at large is the most deadly man in the state. He is far more dangerous than the mad man, than the man who kills his neighbor, yet these we closely incarcerate while we give to the consumptive the right of way into every home and into every public place.

Only yesterday, a mother with abundant bacilli in her sputum left the sanatorium and returned

to her home against our advice; in her family are three small children. She sleeps with her husband and fondles the children and kisses them upon the lips. This patient will die. She will infect and will kill all these children. And the children belong to the state. If the mother were isolated these children would live out their natural lives.

Nor is this an isolated case. We see this act repeated scores of times each year. At our state sanatorium it is repeated not scores but hundreds of times each year. So it is in every sanatorium in the land.

We fail in the control of tuberculosis because we have not the moral courage to take the stand which will eliminate this disease just as effectively as leprosy has been eliminated. We have made of tuberculosis the only exception in our management of infective diseases. All others we have controlled; and I insist that the consumptive has no rights that are denied to others that are a source of danger and a cause of death to those about them. I do not believe that he has the right to kill more than has the mad man or the criminal.

I urge the importance of isolating all persons discharging tubercle bacilli in any manner that may be dangerous to those about them, and for the creation of an intelligent fear of the consumptive patient—a fear which will cause us to throw about these patients that protection which will save others, and particularly the children from them. In advocating this isolation I only urge that well known principle which we follow in everything else—society has the right, and it is its duty, to protect itself against its dangerous members.

New Jersey has led in this movement and already has a law providing for the commitment of dangerous tuberculous individuals to sanatoria for care and treatment.

The American Veterinary Medical Association leads us in the wisdom of their campaign against tuberculosis. They have adopted a resolution declaring that "The ultimate eradication of tuberculosis in cattle depends upon the segregation of the infected cattle and in making the uninfected ones as resistant as possible by proper stabling, water, food, exercise and air." On the other hand, we permit the broadcast scattering of the seed but are attempting to create a resisting soil.

Isolation is our most powerful weapon against tuberculosis. We owe it to ourselves and to those whom we serve to make vigorous use of this weapon. There must be a good wholesome fear of the consumptive patient. So long as no one fears him, so long as this class of patients is per-

mitted to remain in the home and infect all the children in the home, just so long will we meet annually and theorize upon how best to meet the situation but lack the courage to meet it when it forces itself across our way.

We must get it clearly into our minds that tuberculosis is in no sense different from other infectious diseases. It is in no sense different from typhoid, measles or other contagious disease. It is the particular business of the infecting agent in all these diseases to propagate its species, to implant its seeds where they are sure to grow. And this is as carefully and surely done in tuberculosis as in any other disease. The advanced consumptive sows the seeds which find quick implantation in the tender bodies of little children. That these seeds do not manifest themselves in the full crop for a quarter of a century does not alter the conditions from those applicable to any infectious disease. The fault remains ours if we fail to keep the seed from falling upon the soil.

There must be fear, just as there is fear in diphtheria, scarlet fever or smallpox, and we must provide care, and enforce care, upon these victims who are so grave a menace to society.

Discussion

Dr. H. V. Scarborough, Oakdale—Dr. Kime's very good paper is naturally too comprehensive to discuss in a very few minutes, but there are always so many things to say about this subject that we feel like reiterating them even though the subject is an old and hackneyed one. It seems to me that a great deal of the trouble arising in the presentation of the subject of treatment of tuberculosis lies in the fact that we talk about so many things. I sometimes feel that we should talk of rest in tuberculosis and not anything else. Many times rest means too little to us. Dr. Hawes, in the last number of the Boston Medical and Surgical Journal, states that we should think of rest as meaning absolute rest; that is, we may have to feed our patient in bed, keep him absolutely with his head down on the pillow if necessary, because rest is the main thing in the treatment. Fresh air and good food are necessary, but of minor importance in treating tuberculosis. As Dr. Kime intimated, we pay too much attention to food and neglect other factors. As to the question of air, I hope no one will misconstrue what I say, but it seems to me that we sometimes place too much emphasis on fresh air. Dr. Hawes has emphasized the fact that in open air schools the temperature should not be lower than thirty degrees. Of course, if the children are outdoors much we perhaps should not insist on the temperature being so high. We should place emphasis on the freshness of the air and not on the cold. If some patients cannot stand the cold then we should not insist on their being outside or having too much ventilation. When we come down to such things as artificial pneumothorax, climate, sunlight, etc., those

are all essential, but we must not think so much of them as to forget our rest. Artificial pneumothorax has not proven to be what we thought it might. Putting the lungs at rest sounds well, and sometimes the results are so striking that we feel we have not previously done as much as we should. But as time goes by we find that we do not often get the good results we have had reason to expect. Some of us have been using the Alpine Sun Lamp with apparently good results in some cases, but as reports of results obtained by the use of this device come in no doubt we will find that it is not a panacea for everything, although it is worth using. Of course, we try different things, using what we can and getting the best results possible. Treatment should be general rather than to use some one agent exclusively. I do not know whether Dr. Kime wants us to understand by the passage in his paper that climate is second in importance, or whether he means that climate is secondary to rest. I believe he will say that climate is a minor matter. To sum up: First comes rest, second fresh air and good, nourishing food, and then come artificial pneumothorax and some of the other minor things.

Dr. John H. Peck, Des Moines—I arise simply to endorse a great many things Dr. Kime has said. I think he could have emphasized some of them a great deal more than he did, although he has intimated that the scope of his paper was too large for him to be able to cover everything. I would also emphasize the factor of rest. I emphasize to the patient that if all the curative means together amount to 100, rest counts for 75 per cent. of them, climate possibly 2 per cent., and so on down. If you put it in a mechanical way they can understand it better. During the past few months it has been my misfortune to recommend for discharge from the Army between three and four hundred men, and the Surgeon General wants us to give these men some advice regarding treatment. Such a man will say, "Doctor, do you think my case is so bad that I should go West?" Everything else is ignored and I like to be able to tell them that if they have plenty of money to go West and there enter a good sanitarium, well and good. But I always urge sanitarium treatment. I do not put it quite so strong as does Dr. Kime, for I think some can do better at home. But it is harder to get well at home than in an institution. If it is impossible or impracticable for a patient to go to a sanitarium, then he should be treated at home. As the number of sanitariums for the treatment of this class of cases is limited and necessarily will be limited for a good many years to come, it is manifestly impossible for all tuberculous patients to go into an institution. But at least they need the very best medical supervision, and if we can emphasize one thing above all else it is that when you put your patients at rest it must be rest in bed twenty-four hours a day. Other things do not amount to much outside of good medical supervision. Good rest first, then proper diet is advisable. In instituting artificial pneumothorax the results are not always satisfac-

tory. The reason I have to send some patients to Oakdale is that they learn the system, and I like to call this institution a college for tuberculous patients, for I feel that it is for that purpose. Again, there is a great tendency to underestimate the time necessary for recovery. It takes from one to two years in most cases. This thing of telling our patients that they will get well in a short time should be stopped. They absolutely cannot do it, they will break down soon again. They will get much better, but must be kept under supervision for some time. We should have complete isolation, but before we can get that we must have good laws and adequate enforcement of those laws.

Lieut. W. Frazer, Algona—I was particularly interested in hearing Dr. Kime speak of the secondary position of fresh air in the treatment of tuberculosis. I have wondered for years just what there was in this recommendation, sending patients West, etc. When we consider that a number of years ago Dr. Robbins found that tuberculous patients consumed more oxygen than the ordinary person does, it would seem superfluous to recommend more fresh air. The purpose of fresh air is that by having plenty of it they do not have to work so hard to get the amount of oxygen they need, and that is quite in line with the Doctor's statement that the patient should have rest. Rest allows the blood to heal the diseased tissues of the lungs, and if the patient is instructed to breathe deeply he does not get rest to the lung. If we can keep up a good circulation and give the patient a chance to build up, I think as much will be accomplished by that as could be accomplished by sending him to a high altitude, and probably more. When they go to a high altitude they certainly have to work harder to get the amount of air they need. The conclusion was reached that high altitudes were good for tuberculous. In the high autitudes of Peru there are few deaths from tuberculosis, but there are certain conditions there. The lung capacity of the individual who has lived for some time in a high altitude is greater than that of the man coming from a low altitude, and the latter has to work harder to get sufficient oxygen for his need. Therefore we cannot expect the amount of benefit we have been led to believe we would get.

Dr. Kime—In reference to the treatment of the various classes of patients, there is one class that absolutely cannot sleep out of doors in cold weather, and that is the cases far advanced. You know that such a patient will die in a little while anyway. I am often called to see such patients in the home, and I find that they are given the same treatment as are those amenable to treatment—with windows high up in the winter time—when they have only a short time to live. When we have such patients we strive to keep them comfortable. We know they will die in a little while no matter what we do, so we keep them comfortable and prevent them from being dangerous to those about them. Dr. Peck expressed my idea as to climate—that it is worth about 2 per cent.

It is practically worth nothing to merely send our patients to a particular climate. But if in sending a patient to a higher altitude we first recommend to him that he go to a sanitarium in that climate, well and good, for that is the all important factor. From my own experience I am led to believe that few cases of tuberculosis will get well at home. So many times we have seen these patients do well, they will get along very nicely, and they say, I think I can go home and follow out the same line of treatment there. But if you look up these cases you will find that they die. A few years ago a patient from Davenport expressed my idea exactly in the management of these cases. I asked him his occupation, and his reply was, "I am a consumptive." That is his business if he has tuberculosis. I urge the importance of treating these cases in sanatoria now, at a time when we have not sufficient sanatoria. We expect to make a drive at the next meeting of the legislature for more sanatoria at suitable places, and we will save far more lives by taking these patients away from home and keeping them there and letting them die there if need be, for by this means we will cure the next generation rather than to cure tuberculous patients who now come into our hands.

EPIDEMIOLOGY OF INFLUENZA

JOHN H. HAMILTON, M.D., Iowa City

Epidemiologist, Iowa State Board of Health
(Dept. of Pathology and Bacteriology, State University of Iowa)

Influenza has already secured such a foothold in Iowa that it will take several weeks to get it under absolute control in all parts of the state. In fact the physicians of the state are likely to be kept rather busy throughout the winter by influenza and its complications. Because of the fact that in a few more weeks the weather will be a decidedly less favorable factor in the control and treatment of the disease and its complications, it is advisable that all preventive measures be taken to get the disease under control as soon as possible.

Influenza is an acute, infectious disease, occurring both in endemic and epidemic form. The outbreak of this disease in Iowa is simply a part of the present pandemic of influenza. Although we are at present somewhat uncertain as to the exact organism which causes the disease, there seems to be a well founded suspicion that the disease is caused by the influenza bacillus. This organism can be readily isolated from the secretions of the respiratory tract in the early stages of the disease. The efforts to isolate this organism from blood cultures have given very indifferent results. A very small percentage of blood cultures taken by various observers have shown the influenza bacillus.

Clinically the disease presents all the symptoms of a septicemia and we would naturally expect to find the organism which causes the disease in the blood stream. The difficulty in isolating the influenza bacillus from the blood and the present unsatisfactory data concerning the reactions of immunity of recovered patients to this organism, leaves us somewhat in doubt as to whether the influenza bacillus is the inciting cause of the disease which we know as influenza.

Regardless of the present uncertainty as to the etiological factor of the disease, we do know that the chief source of the infective agent of influenza is the secretions of the respiratory tract of patients suffering from the disease. There are undoubtedly numerous so-called healthy carriers or contact carriers. Although we are not able to detect these healthy carriers, we have from our knowledge of other diseases of the respiratory tract, a just reason for believing that there are healthy carriers of the infectious agent of influenza.

We have in influenza various degrees of illness. Some cases are profoundly ill, other cases are so slightly affected that they may not be recognized as cases of influenza at all. These mild cases are capable of giving off just as much infective material as can a severe case. This infective material from a mild case is just as capable of producing a severe infection in other individuals as the infective material from severe cases. Because of the fact that the mild case may be ambulatory his opportunity for disseminating infective material is much greater than a severe case which is confined to his bed.

The infective material from cases of influenza and from healthy or contact carriers leaves the body in the secretions of the respiratory tract. This material is given off in the sputum or in the fine droplets which are cast from the mouth or nose during the acts of coughing, sneezing or talking in a loud voice. Any violent expiration will cause these droplets to be given off from the respiratory tract. These droplets are so small that they will remain suspended in air for several minutes during which time they may be carried several feet from the patient by air currents.

A person becomes infected by transferring some of the infective material, such as sputum, to either the mouth or nose by means of soiled fingers or by means of inhalation of the droplets given off by the patient. We can therefore say that the chief mode of transfer of the infective material is by direct contact, by rather immediate indirect contact, or by droplets. Infective material is not capable of living outside the human body for any considerable period of time. There-

fore the material must be transmitted rather promptly from the case or carrier to some other individual in order to produce the disease.

The incubation period is short. It may be only a few hours to two or three days. It is rarely as long as five days. The length of the incubation period depends largely upon the amount or dosage of infective material. The disease is one of the most readily communicable infectious diseases with which we have to contend. When it occurs in epidemic form it spreads very rapidly.

There are various types of the disease. In the characteristic acute respiratory tract type of disease we have a sudden onset with body weakness, pain in the head, eyes, back and other parts of the body. Vomiting may or may not occur. Dizziness is frequent. There are usually chilly sensations. Temperature varies from 100 to 104. The pulse remains comparatively slow. Sweating is frequent. Appetite is lost. There is generally prostration out of all proportion to the other symptoms. There may or may not be any disturbance of the gastrointestinal tract. The conjunctiva, mucous membrane of the nose and bronchii often give evidence of inflammation.

In by no means all of the respiratory tract types of the disease do we have so severe a manifestation. In mild cases we may have little or no prostration and little or no inflammation of the respiratory tract, except perhaps a "cold in the head." We have degrees of illness varying from the very mild to the severe.

In uncomplicated influenza there is no leukocytosis during the height of the fever. A high white count during the early stages of the disease is indicative of complications. The fever generally lasts from three to ten days. Relapses are not uncommon. Lobar pneumonia is the most frequent complication although in a great number of cases, bronchopneumonia has occurred.

The respiratory tract type of infection has been much more common than the gastrointestinal or nervous type. In the gastrointestinal type of infection our first symptom is generally nausea and vomiting with a very sudden onset, which is followed by marked prostration and general malaise. Typically there is no involvement of the respiratory tract. Constipation is the rule, although some cases have diarrhea. Here again we find varying degrees of illness. Some of the cases are very mild, others more severe. Complications are apparently just as common in the gastrointestinal type of infection as they are in the respiratory type. During the present epidemic the nervous type of infection has occurred very infrequently.

The chief complication of influenza is pneu-

monia. This pneumonia is more frequently due to the pneumococcus than to the streptococcus, although we have had a few cases of streptococcus pneumonia, apparently of the same type as occurred in the military training camps last spring, and which was so frequently a complication of measles. In pneumonia due to the pneumococcus, lobar pneumonia is much more common in the country at large.

The control of influenza consists essentially in breaking up the vicious cycle which permits infective material to be transmitted from one person to another. One of the most important measures which can be taken to control the spread of infective material is the isolation of all persons harboring infective material. This necessitates the detection of every type of the disease. Another important aid in the control of the disease is the careful collection and disinfection of all secretions from the respiratory tract of these individuals.

While it is relatively easy to collect all sputum, it is difficult to collect the droplets which are given off in the acts of sneezing, coughing or loud talking. This can be most effectively accomplished by having the patient wear a mask which completely covers the mouth and nose. This mask should be constructed of several layers of gauze and should be replaced with a clean mask at frequent intervals—at least twice each day. These masks should be carefully disinfected either by dipping them in boiling water for thirty minutes or by burning them. In patients so severely ill that the mask would be a serious inconvenience to their breathing, it is not advisable to use the mask. In this case the patient's bed should be screened in by means of sheets hung around the bed or by ordinary hospital screens.

All nurses or other attendants of the patient should wear masks for their own protection and should avoid touching their face with hands which they have reason to believe are contaminated with infective material. There are also other measures which can be taken to increase the resistance of people who are likely to become exposed to the infectious agent. These measures consist essentially of the fundamental principles of personal hygiene such as the taking of wholesome food at regular intervals, the drinking of plenty of water, the securing of a moderate amount of exercise, securing plenty of sleep—at least eight hours each night—in a well ventilated room. The bowels should be kept open.

Careful medical care of the patients during the entire course of the disease and during the convalescent period is the principal preventive measure which in addition to the above precautions,

will be most effective in the prevention of pneumonia.

Since the preventive measures which enable us to combat influenza are applicable for other infectious diseases in which the infective material is disseminated by means of the secretions of the respiratory tract, it is perhaps advisable to summarize the various procedures which are of benefit under these conditions.

1. All patients suffering from an infection of the respiratory tract should be promptly isolated.
2. An effort should be made to detect any mild or unrecognized case. This should apply particularly to people who handle foods.
3. That all suspected cases be treated as real cases until a definite diagnosis can be made.
4. That all secretions from the respiratory tract be carefully collected at the bedside and disinfected.
5. That the patients as well as nurse or other attendants wear a mask which completely covers the mouth and nose. This mask should consist of several layers of gauze.
6. No case should wear a mask which would be seriously inconvenienced by this procedure. In this case the patient's bed should be carefully separated from the other patients by hospital screens or sheets hung around the bed.
7. When infectious diseases threaten to become epidemic, public assemblages should be discontinued, and all crowds should be avoided.
8. People who wish to avoid infection should keep themselves in the best physical condition by eating plenty of wholesome, easily digested food at regular intervals; by drinking plenty of water—eight or ten glasses daily; by securing moderate amounts of out door exercise; by keeping bowels moving regularly and by securing at least eight hours sleep each night in a well ventilated room.

BARRACKS FOR STUDENT CORPS

Luxurious barracks with halls of marble and walls of Bedford limestone will quarter temporarily the S. A. T. C. unit at the University of Iowa. Five university buildings are being dismantled and equipped for several thousand soldiers, and additional quarters are available, if necessary.

Soldiers will sleep over a concealed swimming pool in the women's gymnasium and will mess over a hidden cinder track at the armory. The women's gymnasium will be occupied by soldiers only during the first quarter while the women play hockey and outdoor games. An extra floor has been laid in the two big gymnasium rooms in this building on a level with the balconies. A huge kitchen is being built for the soldiers outside of the armory.

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa

Publication Committee

D. S. FAIRCHILD.....Clinton, Iowa

W. L. BIERRING.....Des Moines, Iowa

C. P. HOWARD.....Iowa City, Iowa

Trustees

J. W. COKENOWER.....Des Moines, Iowa

T. E. POWERS.....Clarinda, Iowa

W. B. SMALL.....Waterloo, Iowa

SUBSCRIPTION \$2.00 PER YEAR

Books for review and society notes, to Dr. D. S. Fairchild, Clinton. All applications and contracts for advertising to Dr. T. B. Throckmorton, Des Moines.

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. VIII

December 15, 1918

No. 12

AFTER THE WAR

Every interest is asking what will happen when the war ends. Magazine writers profess to feel a certain anxiety about our future business welfare when we return to the normal process of thinking, and not a few writers are urging the government to appoint a commission to consider ways and means of meeting new conditions and point to what France and England and even Germany are doing in preparing for the future. We feel free to say that great economic problems are beyond our ken, but that things will not be quite the same as formerly is not quite beyond our understanding.

A suggestive article appeared in the January, 1918 Atlantic Monthly by Oswald Garrison Villard of Nation, and Evening Post of New York, in relation to Journalism. While Mr. Villard's paper does not discuss exactly what we have in mind at this time, the argument he presents suggested the thought which has come to us with considerable frequency. There has been a tendency during the past year for the great daily newspapers to consolidate by merger. It appears that the great number of daily papers, has made the publication unprofitable, both from the standpoint of circulation and advertising, and apparently the line of safety lay in the direction of consolidation. Without considering the line of Mr. Villard's argument, we are able to deduce in some measure the business of the medical profession. Since the beginning of the war, the public has come to consider the practice of medicine from a

point of view never considered before. So important has the relation of medicine to public welfare become, that the government has practically commandeered the profession for public service. Small minds still maintain a patronizing attitude and while they feel helpless without the services of physicians, they profess a commanding control over the activities of the doctor, except when he is called upon to exercise his technical knowledge. Those of a wider view are disposed to cooperate in larger matters and defer to his skill and judgment in the more important welfare activities.

The medical profession assume no arrogant attitude, but rather, an attitude of cooperation on lines becoming an educated and self-respecting citizen, in some ways better fitted to consider public matters than the average man.

There are reasons why a doctor might aspire to election to certain legislative bodies and it should not be charged to him that he had become a political doctor.

In going over the history of early medical practice in Iowa we find that a very considerable number of the most prominent and distinguished, had sat in both houses of the legislature. It has been quite common for the most distinguished practitioners in Europe to sit in legislation bodies. It will be remembered that Professor Virchow served many years in the German Reichstag. Professor Pozzi, the famous surgeon, in the French Senate, and many others including Pasteur who only declined, because of the great work he was engaged in. Even our own Dr. Benjamin Rush was a member of the Continental Congress. In the present condition of affairs, it should be the duty of every doctor to urge and encourage members of the medical profession to become candidates for the House or Senate; they are much needed now perhaps more than ever before.

The re-organization and consolidation of the profession should be considered at an early moment. In every town where there are several doctors, team work should be arranged for, private ill feeling should be done away with. Where there are several weak competing hospitals in a village, or small city, they should be consolidated and equipped for good high class work. We know of many such institutions that are nothing more than boarding houses for sick people and are liable to be a menace to the community.

This will be difficult now, as many of the best young doctors are in the United States service, but we hope will soon return, with radically changed views of what the practice of medicine really is. The doctor who adheres to the indi-

vidualistic idea of the practice of medicine, must not be disappointed if in the future, he finds his patients drifting to more enterprising centers of medical activity. This will certainly happen, for it must be observed that the people are rapidly being educated to what medical sciences can do in preventing disease and directing a recovery. The war has been a great educating influence, perhaps more in medicine than in anything else. There are institutions supported by the states doing special work that should be liberally dealt with. The insane hospitals, the epileptic colony; the hope we have in the future for the betterment of certain unfortunates; the institutions for the blind and the institutions for the feeble minded. Even if the betterment of these unfortunates is limited, the educational influence is immense. There are institutions for the care and treatment of tuberculosis patients, some public, some private, that need our help and encouragement. These institutions are of great value to the state. They help greatly in saving valuable lives. We have too long been indifferent to them. Those that are private have been left to get along as best they may. We must have medical men in the legislature to help in essential welfare work. Men who understand what is really needed.

There is a fundamental and essential activity that we may consider in this connection, and that comes under the head of medical organization. The American Medical Association and its journal has been of immense service to the country in this trying period of its history. Fortunate it was, that its activities came under the hands of men of the highest character, loyalty and courage at a sufficiently early day to get into full activity before the war came with its demand for medical officers and medical cooperation. To the state medical associations and auxiliary county societies, has come the opportunity to bring directly home to us the coordinating influence of the national association. To the state presidents, secretaries and state journals, comes the opportunity of personal direction during their terms of office. The thought has come to us from recent experience that a state or county medical organization for the purpose of reading and discussing formal papers, fills only a part of the purpose of the organization. It has, and will often happen, that certain public emergencies arise which need medical co-operation and the county medical, with its organization and equipment stand ready for service in accordance with some well digested plan. Such coordination will appeal to the public in a way to increase the influence and reputation of the medical profession and lead to a more logical and cooperative practice than the

purely individualistic method, as it has been and now is to a great extent. When an epidemic disease for instance, breaks out in a community, the profession is called together to devise ways and means to meet the emergency with no little faith in what the local profession can do. It seems hardly necessary for us to bring forward the advantages of a well organized and active medical society to the public and the profession.

For many years we have worked for a closer medical organization, not alone for the business advantage of the profession, but for a much wider reason, for public service, for influence, for reputation, for higher ideals, higher education and for closer fellowship. Other things will take care of themselves.

We have seen much improvement in the status of the profession. We are looking for more improvement. We believe now is the time for the agitation of a propaganda. We feel a pride in the medical profession and we feel that the general public joins with us in the sentiment.

DR. JULIA DONAHUE GOES TO WASHINGTON

Doctor Julia Donahue left for Washington, D. C., October fifteenth to take up war relief work. Dr. Donahue tendered her services some months ago to relieve a medical woman for overseas duties.

She will be in the home service department for institutional work and will specialize in laboratory work, anesthetics, etc. under the direction of the American Women's Hospital, sent out by the Women's National Association and after reporting at Washington, she may be sent out for any substitute service in hospitals throughout the country whereby doing she will release a medical woman for overseas duty. Dr. Donahue is Burlington's one woman physician and has made a success of her work and won the respect and affection of both her confreres in the profession and patients under her care.

She has found time for active Y. M. C. A. work and is especially fitted for overseas duty, if called to go. She however, has enlisted for what is known as Home Service in institutional work and will probably not go abroad at all. Even though her work of years in foreign missionary fields has given her an experience unusual.

Burlington is particularly interested in the Women's Hospital, the War chest voted the sum of \$200 to its support during the past week and probably had they had the courage to ask for more, it would have been forthcoming as American women are doing so much now that the American Women's Hospital wherein the service is all from medical women appeals strongly.

Doctor Donahue is leaving a good practice to take

up this service and whether she is to be given a rank is not specified.

While Burlington glories in her appointment there is regret at her going and her work will be watched with interest.

CLINIC SUGGESTED FOR FEEBLE MINDED

A psychological clinic with its object the examination of unusual children of all types to find out if they are feeble minded or are born criminal may be a possibility for Des Moines if suggestions made by the social workers of the city at their luncheon yesterday in the Chamber of Commerce can be carried out by the public welfare bureau.

A resolution was passed asking the public welfare bureau to take steps to ascertain the possibility of such a clinic. Drake University was the suggestion of the workers for its location.

Dr. Arthur Holmes, president of Drake University, made an address on the social significance of feeble mindedness in which he said that the subject was universally interesting because one out of every 500 persons in the United States was feeble minded, making a total of those afflicted between 300,000 and 500,000.

"Institutions where these unfortunates can be segregated are full and many are waiting to get in," declared Dr. Holmes. "Feeble mindedness is increasing because there are no restrictions on marriage. Criminals, paupers and tramps are largely recruited from their ranks."

That eight out of eleven girls picked up on the streets are feeble minded was the opinion expressed by Miss Sybil Campbell yesterday at the meeting.

Dr. Holmes estimated that it would take about \$300 to equip such a clinic at the university and its yearly upkeep would be about \$2,500, which includes the salary of a competent examiner, a recorder and the social workers necessary.

Miss Minnie M. Bush, secretary of the Associated Charities, was re-elected president of the social workers' organization and Ruth Biedermann was chosen secretary.

DR. CHAMBERLIN IN SERVICE

Dr. H. D. Chamberlin has been sent down to Norway, in Benton county by the government to assist in the stamping out of the epidemic of influenza in that community. Dr. Chamberlin who has been a resident of Nevada for over a third of a century was in the successful practice of his profession until the death of his wife a few years ago, since which time he has been more or less retired from active practice.

Some time ago he enrolled in the Volunteer Medical Service Corps which was organized by the oldest men of the profession who volunteered their services to the government in whatever work might be assigned to them.

During the past year he has been a valuable assistant to Dr. F. S. Smith, the medical member of the Story county Local Board and has been faithful in the work of examining the registrants for the army service.

He goes down to Norway upon a salary from the government, there being no local physician there at this time and his duties will be the treating of such cases of influenza as they may have there and also to give them advise and assistance in eradicating the epidemic from the community.

OCTOBER MEETING OF PROFESSIONAL WOMEN'S LEAGUE

The Professional Women's League held its October meeting at the city library, Des Moines, with the president, Miss Sara Nollen, presiding. The program was in charge of the league physicians, Dr. Nelle Noble and Dr. Lenna Meanes. Dr. Noble discussed "Medical Miracles," giving an interesting presentation of modern improvements in the way of treatment of injuries and diseases, partly in relation to civilian life, but largely in connection with the problems of the war. She showed that many of these had been solved in a way which marked great advance over the treatment of similar conditions in other wars.

The subject of the paper by Dr. Meanes was "Child Welfare and Social Problems." Dr. Meanes has given much attention to the questions in connection with the betterment of conditions and opportunities for little children, and is chairman of the child welfare committee of the state council of national defense. She made the interesting statement that of the 33 per cent. of men rejected for physical disability under the first draft, 19 per cent. were disabled because of defects which might have been remedied in childhood.

Dr. Meanes also spoke of the growing possibility of a national movement for the promotion of social hygiene and of the advantages of such a movement to important questions of public health.

Discussion followed the reading of the papers led by Mrs. Anna Glomset.

ANNUAL MEETING MEDICAL SOCIETY OF THE MISSOURI VALLEY

The thirty-first annual meeting of the Medical Society of the Missouri Valley was held at Omaha, September 19-20, 1918. In spite of war time the sessions were up to the proverbial standard of attendance, interest and good fellowship. A fair sprinkling of military men added life and zest to the atmosphere. The Hotel Fontanelle, with its throng of guests, civil and military, maintained its reputation of life, gaiety and hospitality.

The program of twenty medical and surgical papers went along with a snap that kept interest at a high point. Our long distance guests added to the

life of the meeting. Pottenger of California gave in an hour talk the present status of tuberculosis most comprehensively. Blackmorr of Chicago occupied a half hour on radium and x-ray treatment of cancer. Hopkins of Chicago, the railroad surgeon, gave a splendid talk on unusual fractures and dislocations. Lord of Omaha, back from army service, gave first hand experiences in surgical life in the hospital.

The patriotic banquet on Thursday evening was essentially military in character. The center of attraction was Colonel Franklin Martin, chairman of medical affairs, fresh from Washington, D. C. His address concerned largely the Volunteer Medical Corps. His address was patriotic and scholarly. Col. J. M. Banister of Omaha (U. S. Army, retired) reviewed the achievements of the military surgeon, and made us feel the debt we, as a profession, owe the camp surgeon. There were a hundred and fifty men in attendance upon the banquet.

In the election of officers the society paid its tribute to the seventeen years of faithful service of our secretary Chas. Wood Fassett, by electing him to the presidency. The evote was unanimous. Dr. Weston, of Diagonal, Ia., was made first vice-president; Dr. Aikin of Omaha, second vice-president, and Dr. S. Grover Burnett of Kansas City, secretary. The name of Dr. Gebhart, now in France, was retained as treasurer, the secretary to do the work until Gebhart returns.

The next meeting, September, 1919, will be held in Des Moines, where another profitable and interesting time is promised. We all left Omaha with the regretful air of longing for more, with the pleasant memory of the Thursday luncheon, given complimentary to the society by the Omaha Commerce Club.

J. M. B.

ADDRESS BY DR. E. C. ROSENOW AT CLINTON, IOWA

Dr. E. C. Rosenow, the infantile paralysis expert from the Mayo Foundation at Rochester, Minn., addressed the Clinton County Medical Society at the Lafayette Hotel following a 6:00 o'clock dinner which was given in his honor.

The meeting was a great success and almost every member of the medical society together with Mayor Corson and the members of the board of health were present until a late hour.

Dr. Rosenow expressed the opinion that Clinton would escape an epidemic of infantile paralysis owing to the fact that it was six weeks since the first case was reported and the manner in which the disease has been handled, together with the fact that cold weather is coming on and the disease does not thrive in cold weather. He ventured the opinion that there might be a few more cases but even this is doubtful.

During the meeting he explained to the physicians the technical side of the disease and warned them to be on the continual lookout for new cases

and whenever there was a doubt to make a spinal puncture and determine through analysis whether the case was infantile paralysis or not. He gave the same warning to physicians as to parents in caring for children carefully at the first symptoms of illness.

Dr. Rosenow and his two assistants, Miss Dunlap and Miss Enke, left via automobile for Dubuque, en route to Rochester.

ORDERS FROM THE WAR DEPARTMENT

Orders have been received at Ft. Des Moines from the war department designating the big reconstruction hospital, at which approximately two hundred soldiers from overseas are recovering from battle injuries, as a "United States general hospital." The institution heretofore has been designated as an army hospital.

Similar action, it is announced, also has been taken in the hospitals at Ft. Benjamin Harrison, Ohio; Ft. Snelling, Minnesota; Ft. Douglas, Utah; Ft. Sheridan, Illinois; Ft. Logan H. Roots, Arkansas; Plattsburg Barracks, Carlisle Indian School, Carlisle, Pa., and Speedway Park, Maywood, Ill.

The order means that these hospitals will be taken from the jurisdiction of territorial departments and will be directly under the supervision of the Surgeon General and adjutant generals of the Army.

Not only will American soldiers from overseas be returned for treatment, but it is probable also that sailors and German prisoners wounded in battle will be brought to these institutions for treatment.

Greater expediency in handling all manner of work will be obtained by the fact that the hospital authorities are directly under the supervision of the Surgeon General.

MEDICAL NEWS NOTES

Clarence Hoit of Rockwell City, son of Dr. and Mrs. J. N. Hoit, one of the first Calhoun county boys to go to France with the American Expeditionary Forces, recently went over the top six times in four days, and on one of his trips brought back a German lieutenant as a prisoner. Hoit relieved the prisoner of his photograph, his pistol and other souvenirs. In a letter received last week by his mother, Clarence enclosed the photograph of his captive. Dr. Hoit is also in France in command of a medical unit.

Dr. G. P. Warner of Marion, Kansas, a brother of Dr. W. A. Warner of Miles, Ia., has enlisted in Red Cross service overseas.

Dr. M. B. Call was recently operated upon for appendicitis at the Waverly hospital.

Dr. Crumpton writes from the front in France that; "A while back I ran into some of the boys from the Rainbow division and saw many of our Webster City boys. They all looked so fine and were a most happy bunch. They have given a most wonderful account of themselves. They have been split up at different parts of the line recently and

when I questioned an intelligent prisoner, he said, "We fear most the Rainbow and the 42nd division boys."

Dr. W. C. Goenne of Davenport formerly of Eldridge was recently appointed by the Davenport board of health as city physician for Davenport during the absence of City Physician George M. Middleton, who has enlisted in the medical service of the U. S. Army.

Dr. Fred Lambach has been commissioned a captain in the medical corps of the U. S. Army, according to advices reaching the Democrat from Washington.

Major Frederick H. Roost will be the first Sioux City major to go overseas. He has been advanced to that rank and is now surgeon of the One Hundred and Thirty-fifth Infantry stationed at Camp Dix, N. J., awaiting overseas service. His majorship will date back to last March. Major Roost left Sioux City for Camp Cody, Deming, N. M., more than a year ago. He was a lieutenant in a medical company. His advancement to the rank of major is his second promotion within a year.

Dr. Julia F. Hill, daughter of Dr. Gershom H. Hill, who has been doing laboratory work at the Iowa Congregational hospital and in the Equitable building for Dr. Strawn, left the city for Atlanta, Ga. She has been sent there by Surgeon General Gorgas to work in the laboratory of United States general hospital No. 6 at Fort McPherson, where she expects to remain at least during the coming winter.

Miss Georgis Rich, of Reading, Massachusetts, arrived in Muscatine to take up her duties as superintendent in Bellevue hospital. She is a graduate of the Havrehill Hospital Training School and also of the Massachusetts General Hospital at Boston. At one time she was superintendent of nurses training school and is eminently well fitted to take charge of the local hospital. Miss Miller, the former superintendent, resigned her position here on order to take up a claim in Oregon.

Pocahontus county can add another star to its service flag. The Des Moines Register, Sunday stated that Dr. Edna Whitcomb Brown of Gilmore City is the first woman physician in Iowa to pass the examination of the medical board at Camp Dodge for war service. She will be sent to the prison hospital at Fort Oglethorpe, Ga. She formerly lived in Des Moines where she was an office assistant of Dr. Lucy Harbach.

Dr. and Mrs. N. McKitterick celebrated the thirtieth anniversary of their wedding with a dinner of twenty-two covers at the Golf Club. The table, which was beautiful with its rose-shaded candles and roses for a center decoration, was surrounded by a congenial company of friends. With Dr. and Mrs. McKitterick was their daughter-in-law, Mrs. Edward McKitterick, who is here on a visit while her husband is abroad. Thirty years ago, Dr. and Mrs. McKitterick were married in Chester, Minn., and most of that time has been spent in Burlington.

Lieut. L. A. Hammer of Ottumwa, has won the

Croix de Guerre for bravery in action. News of his decoration was received by his parents, Mr. and Mrs. J. P. Hammer. Lieut. Hammer's action consisted in risking his life to save others in the battle at Chateau Thierry June 13 when he removed his own gas mask Hospital. Dr. Cooper prior to going to Topeka, had in order to give medical attention to wounded men.

Dr. William E. Burns, diagnostic bacteriologist of the Iowa State Board of Health, has been commissioned a lieutenant in the United States Army and has been assigned to the Yale University army laboratory, at New Haven, Conn.

Dr. Wm. Smouse has returned from Florence, Ala., where he spent three weeks assisting in the care of those who were ill with influenza from the nitrate plant which is being built on the Tennessee river at Mussle Shoals. There were 3,600 employees suffering from influenza.

Lieut. Jesse Sickler, son of Dr. and Mrs. Dean Sickler of Ogden has just written to his mother from a base hospital at Vittel, France, telling her that he is suffering from shell shock. He says a shell exploded near him and when he came to his senses he was unable to talk. Since then, however, he has been under treatment in the hospital and says he is better but still unable to talk.

Dr. J. C. Ohlmacher, who has been a member of the staff at the Clarinda hospital for several years, has discontinued his work there to take a position on the faculty of the University of South Dakota at Vermillion.

Dr. E. B. Mountain has been appointed physician for the student reserve corps at Drake University, and will devote a portion of his time to keeping the men physically fit. The office carries no commission, neither will the physician be required to wear the army uniform.

T. C. Cooper, a former Ogden boy, commissioned a first lieutenant announced that he had been assigned to service at Camp Dodge. For the past year or more Dr. Cooper has been located at Topeka, Kansas where he was a surgeon in the Kansas State Hospital. Dr. Cooper prior to going to Topeka, had seen a year's service in England where he was in the medical corps of the British Army and was stationed in England, where he was in a reconstruction hospital. Upon his return to this country he took up work at Topeka. Prior to enlisting in the British service he was in practice at Luther, where he had been located for several years.

Major F. G. Murray, a Cedar Rapids physician, is in charge of the medical department of all the training camps at Hawaii with headquarters at Fort Shafter, Honolulu.

Dr. A. J. Peterson, Forest City, has been named city health officer by the city council. The office has been vacant since the departure of Dr. Thos. Lucast for service in the Army.

Instead of two-thirds of the Army doctors being in places of safety, the proportions are just about reversed, and the casualties in the medical corps are quite half of those of the line officers. In the battle

of Somme, 300 British surgeons are said to have been killed and wounded, and the casualty rate among nurses is climbing rapidly up to the surgeons' total.

Dr. Max Witte has been re-elected superintendent of the Clarinda insane hospital.

The Clinical Congress and the American College of Surgeons which was to have convened in New York in October has been postponed on account of the influenza epidemic.

Dr. H. L. Bridgman recently of Columbia has moved to Knoxville and will occupy the offices formerly occupied by Dr. Weiss who is now in the Army.

Dr. R. A. Toben of Cantril has moved to Bloomfield.

Dr. J. O. Murphy who received a commission in the Medical Corps of the U. S. Army has been assigned to the U. S. Railway service with headquarters at St. Joe, Mo.

Dr. William Carpenter resigned as Polk county coroner and has been assigned as camp inspector for the United States Government for Camp Zachary Taylor, Ky.

Dr. Chelson of Grafton will move to Mason City to take charge of Dr. Brisbane's practice during his service in the war.

Dr. E. O. Vollum of Bode has moved to Albert Lea, Minn.

Dr. Phil McQuirk of Spirit Lake is stationed at Fort Des Moines on reconstruction work for men sent from France.

Dr. Cecil Morehouse formerly of Waukon who has been serving in the Army Medical Corps in France, was killed at the front while caring for the wounded men.

Dr. Lillie A. Arnett was transferred the first of September from LaGlaudier to Angoulême. At the latter place she has been given charge of a large four story building which is to be converted to hospital and dispensary purposes.

Dr. T. B. Throckmorton, an insanity expert, told the delegates at the recent convention of the Medical Society of the Missouri Valley at Omaha that the Kaiser has paranoia hallucinaria, to say the least, and predicted the Kaiser would become insane if he lives long enough. Dr. Throckmorton diagnosed the Kaiser's case in detail, just as he would that of an ordinary individual.

Dr. Charles Ryan was elected chairman of the arrangements committee for the next meeting of the Medical Society of Missouri Valley which will be held in Des Moines in September, 1919.

Dr. H. H. Bell has been appointed postmaster at Paullina.

Dr. J. L. Limburg formerly of Farley, more recently of Walt Hill, Neb., enlisted as lieutenant on the Medical Reserve Corps. Was stationed at Kelly Field, Texas, and transferred overseas to London, England for hospital services.

Dr. F. M. Kelsay has been elected mayor of Villisca.

Dr. F. M. Trimmer of Knoxville goes to navy yard near Boston.

Dr. J. R. Cross of Hamilton was instantly killed while crossing the C. B. & Q. tracks at Albia.

Dr. G. L. Smith has taken the office of Dr. B. S. Burns of Shenandoah. Dr. Burn is in the x-ray department at Camp Bowie.

Dr. Edward Walker of Arnolds Park died at Excelsior Springs, Mo. Dr. Walker had been in poor health and went to the Springs for treatment.

Dr. F. I. Stuart of Independence. "I beg to draw your attention to the great assistance rendered to this division in the evacuation of wounded on the 29th inst. by Lieut. F. I. Stuart and his bearer subdivision.

"Lieutenant Stuart rendered particular good service and his association with this unit gave great pleasure to us all."

In transmitting a copy of this report to the proper authorities the American colonel adds this note: (Fairchild)

"It gives me much pleasure to note that the services of the medical department of this division have been of such high character as to be commended by our allies. It is directed that this memorandum be brought to the notice of the medical department of all organizations."

Dr. G. Q. Armitage of Osceola, was recently elected president of the Southwestern Medical Association at a recent meeting of the Association at Shenandoah.

Corner stone of the new St. Luke's Hospital at Davenport laid by Bishop Morrison with impressive ceremony. St. Luke's Hospital is to have 100 rooms and is to be modern in every respect at a cost of \$200,000.

Supplement to list of Iowa physicians who have been recommended by the Surgeon General for commissions in the Medical Officers' Reserve Corps.

Earl Rice, Capt., Ames.
John Dale Paul, 1st Lieut., Anamosa.
Royal August Becker, 1st Lieut., Anita.
Serenio Marcellus Ferguson, 1st Lieut., Avoca.
Edgar Pearl Benedict, 1st Lieut., Battle Creek.
William Alonzo Cooper, 1st Lieut., Bayard.
Elmer Lewis Lampe, 1st Lieut., Bellevue.
Albert Benson Deering, Capt., Boone.
Wayne McKnight Shirley, 1st Lieut., Carroll.
Frederick Sylvester Leonard, 1st Lieut., Cascade.
John Henry Van Dyke, 1st Lieut., Cedar Falls.
Oldrich Krejsa, Capt., Cedar Rapids.
Claude Edwin Lowrey, 1st Lieut., Centerville.
Benjamin F. McNeil, 1st Lieut., Charles City.
William Henry Seymour, Capt., Charles City.
Thomas James Dorsey, 1st Lieut., Clare.
William Chambers Phillips, Capt., Clarinda.
Fletcher Jackson Van Meter, 1st Lieut., Clarinda.
James Levi Scripture, Capt., Clarksville.
Frank Milos Keefe, 1st Lieut., Clinton.

Daniel Farrel Huston, 1st Lieut., Columbus Jct.
 Milo Benjamin Dunning, Capt., Conway.
 Howard Paul Benjamin, 1st Lieut., Council Bluffs.
 Gean Dutton Cleaver, 1st Lieut., Council Bluffs.
 James Dunn, 1st Lieut., Davenport.
 Charles Edward Glynn, Capt., Davenport.
 Raymond Edward Peck, Capt., Davenport.
 William August Stoecks, Capt., Davenport.
 William Frederick Brinkman, 1st Lieut., Des Moines.
 William Sanford Carpenter, Capt., Des Moines.
 Edward John Harnagel, Capt., Des Moines.
 Christian Bateman Luginbuhl, Capt., Des Moines.
 Horace Jarrett Patchin, 1st Lieut., Des Moines.
 Elva Porter Stoner, Capt., Des Moines.
 Harry Delbert West, 1st Lieut., Des Moines.
 Louis Franklin Talley, 1st Lieut., Diagonal.
 Eutellis Augustus Cantonwine, Capt., Dubuque.
 Ray Rhinalds Harris, 1st Lieut., Dubuque.
 Joseph Henry Schrup, Capt., Dubuque.
 John Milton Walker, Capt., Dubuque.
 Perry Grant Ingersoll, 1st Lieut., Dunlap.
 Joseph Thomas Slattery, 1st Lieut., Dunlap.
 John Patrick Redmond, Capt., Dysart.
 Loraine William Ward, 1st Lieut., Fairbank.
 Frank Ray King, Capt., Farmersburg.
 Nathan Sidney Bevius, 1st Lieut., Ft. Atkinson.
 Isaac Wilsey Traverse, Capt., Ft. Madison.
 Francis Andrew Gillett, 1st Lieut., Fremont.
 Alvin Axley Rose, 1st Lieut., Gilbert.
 Arthur Wesley Lundvick, 1st Lieut., Gowrie.
 Edwin Ewell Harris, Capt., Grinnell.
 Henry Edward Meyer, Capt., Hampton.
 Frank Earl E. St. Clair, 1st Lieut., Hampton.
 Irvin John Pascoe, 1st Lieut., Harvey.
 Edgar Christy, Capt., Hastings.
 Albert Julius Meyer, 1st Lieut., Hawarden.
 Gerit Maris, 1st Lieut., Hull.
 Elmer Ellsworth Kimmel, 1st Lieut., Iowa City.
 Thomas McMahon, 1st Lieut., Iowa City.
 A. Fred Watts, 1st Lieut., Iowa City.
 Joseph Herbert Wolfe, 1st Lieut., Iowa City.
 Lee Matthew Coffey, Capt., Keokuk.
 Philip Miller Day, Jr., 1st Lieut., Keokuk.
 Charles Wilbur Patton, 1st Lieut., Laurel.
 Royal Elis Brisbane, 1st Lieut., Mason City.
 Thomas Dana Jacobs, 1st Lieut., Morley.
 John W. Laird, 1st Lieut., Mt. Pleasant.
 Jonathan Jay Pitcher, 1st Lieut., Mt. Pleasant.
 Nicholas Walter Labagh, 1st Lieut., Mystic.
 Virgil Orin Muench, 1st Lieut., Nichols.
 William Hammond Worley, Capt., Nodaway.
 Edmund Henely, Capt., Nora Springs.
 Florance Patrick Leehey, Capt., Oelwein.
 James Orval Ganoe, Capt., Ogden.
 Floyd Wilmuth Newell, 1st Lieut., Ottumwa.
 Thomas Alexander Hobson, 1st Lieut., Parkersburg.
 John L. Seabloom, Capt., Red Oak.
 Herbert Marc Huston, 1st Lieut., Ruthven.
 William Cyrus Cummings, 1st Lieut., Ryan.
 Herman John Brackney, Capt., Sheldon.
 Malcolm Edwin Kemp, 1st Lieut., Sigourney.
 Samuel David Carney, Capt., Sioux City.

Benjamin Courshon, Capt., Sioux City.
 Seine Bolks DePree, Capt., Sioux Center.
 William Garfield Rowley, 1st Lieut., Sioux City.
 Charles Chapman Colleser, 1st Lieut., Spencer.
 Frank Lane Nichols, 1st Lieut., Sutherland.
 Brownlow Bartley Miller, 1st Lieut., Tabor.
 John Alysus Cahill, 1st Lieut., Volga City.
 Henry Clay Hull, Capt., Washington.
 Elmer Burton Hadley, 1st Lieut., Waterloo.
 Edwin Raymond Shanon, Capt., Waterloo.
 Jacob M. Smittle, Capt., Waucoma.
 Homer Moon Austin, Capt., Wellman.
 Clifford David Mercer, 1st Lieut., West Union.
 Frederick StuberBowen, 1st Lieut., Woodburn.

IOWA MEDICAL MEN IN THE WAR

To Camp Crane, Pa., Mobile hospital, from Camp Jackson, Major P. B. McLaughlin, Sioux City.

To Camp Greene, N. C., base hospital, from southern department Capt. E. M. P. Sward, Glenwood.

To Camp Hancock, Ga., base hospital, from Fort Ogelthorpe Capt. J. C. Murphy, Davenport.

To Camp Upton, N. Y., base hospital, from Fort Ogelthorpe, Lieut. W. H. Johnston, Muscatine.

To Lansing, Mich., Michigan Agriculture College, Lieut. H. L. Bridgman, Columbia.

To Fort Oglethorpe, base hospital, from Camp Wheeler, Lieut. H. L. von Lackum, Iowa City. For instruction, Lieut. J. O. Murphy, Eldon.

To Garden City, N. Y., from Fort Sill, Major T. L. Long, Woodward.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Grant, Ill., base hospital, for instruction, from Fort Riley, Lieut. F. P. Winkler, Sibley. On completion to Camp Zachary Taylor, Ky., base hospital, for instruction, from Fort Riley, Capt. W. Ruml, Cedar Rapids.

To Washington, D. C., St. Elizabeth's hospital, for instruction, from Camp Travis, Lieut. J. I. Marker, Centerville.

To Camp Dodge, Ia., base hospital, Capt. L. M. Coffey, Keokuk.

To Camp Grant, Ill., base hospital, Capt. E. A. Cantowine, Dubuque.

To Camp Pike, Ark., Lieut. T. A. Hobson, Parkersburg.

To Fort Ogelthorpe for instruction, Capt. M. B. Dunning, Conway.

To Fort Riley for instruction, Capt. A. B. Deering, Boone; J. P. Redmond, Dysart; H. C. Hull, Washington, Lieuts. R. A. Becker, Anita; W. A. Cooper, Bayard; F. S. Leonard, Cascade; T. J. Dorsey, Clare; P. G. Ingersoll, Dunlap; C. W. Patton, Laurel; F. W. Newell, Ottumwa.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Capt. C. B. Luginbuhl, Des Moines.

The following order has been revoked: To Camp Greene, N. C., base hospital, from Southern Department, Capt. E. M. P. Seward, Glenwood.

To Camp Dodge, Ia., base hospital, for instruction, Capt. C. E. Glynn, Davenport; Lieut. J. A. Cahill, Volga City. To examine the command for nervous and mental diseases, Lieut. F. J. Van Meter, Clarinda.

To Camp Shelby, Miss., base hospital, for instruction, Lieut. F. A. Gillett, Fremont.

To Camp Wheeler, Ga., base hospital, Capt. J. L. Seabloom, Red Oak.

To Fort Ogelthorpe, for instruction, Lieuts. J. H. Wolfe, Iowa City; W. G. Rowley, Sioux City.

To Fort Riley for instruction, Capts. W. C. Phillips, Clarinda, S. D. Carney, Sioux City; Lieuts. J. D. Paul, Anamosa; D. F. Huston, Columbus Junction; G. D. Cleaver, Council Bluffs; T. D. Jacobs, Morley; N. W. Labagh, Mystic; W. C. Cummings, Ryan.

To report to the commanding general, Central Department, Capt. J. O. Ganoe, Ogden; Lieut. E. B. Hadley, Waterloo.

To Camp Colt, Pa., from Camp Grant, Lieut. C. A. Miller, Nevinville.

To Camp Crane, Pa., base hospital, from Fort Ogelthorpe, Capt. H. M. Decker, Davenport. Evacuation Ambulance Company, from Fort Riley, Capts. S. A. Huber, Charter Oak; H. D. Mereness, Doli-ver; Lieut. J. O. Weaver, Shenandoah.

To Hoboken, N. J., base hospital, Capt. A. D. McKinley, Lieut. H. E. Ransom, Des Moines.

REPORT OF INFLUENZA CASES BY DR. CHARLES ENFIELD, JEFFERSON

A brief statistical report of a small series of influenza cases seen in private practice in an average Iowa community, during the present epidemic may be of some interest as showing an apparently milder course of the disease under conditions prevailing in the home life of the small town than obtains either in camps or cities, whence most of the statistics have been obtained. The series consists of two hundred cases seen in my own practice and in consultation. The following table indicates percentages of complications.

Pneumonia	Total 18	Severe 5	Deaths 2
Meningitis	Total 2		Deaths 1
Otitis Media.....	Total 3		Deaths 0

The remaining cases, 178 in number, made a recovery after an uncomplicated course lasting from two to ten days. Of the two pneumonia deaths one was a fat female eight months pregnant, the other a male with first stage tuberculosis who lacked the proper care and was up and about while running a temperature and prior to the onset of the pneumonia. In the eighteen pneumonias there was one dry pleurisy, no pleurisy with effusion and no empyemas. Only one of the otitis medias went on to suppuration.

So far as any conclusions may be drawn from so small a series of cases these figures would seem to indicate that the course of the disease has been much

milder here than in either large cities or military camps, although the care and nursing have been in many cases very bad indeed.

RAVAGES OF THE INFLUENZA EPIDEMIC

Deaths in America Greatly Outnumber War's Casualties Among American Troops

Washington, D. C., November 16, 1918—The influenza epidemic has thus far taken a much heavier toll of American life than has the great war. The total loss of life throughout the country is not known, but the Bureau of the Census has been publishing, for forty-six large cities having a combined population estimated at 23,000,000, weekly reports showing the mortality from influenza and pneumonia. These reports, which cover the period from September 8 to November 9, inclusive, show a total of 82,306 deaths from these causes. It is estimated that during a similar period of time the normal number of deaths due to influenza and pneumonia in the same cities would be about 4,000, leaving approximately 78,000 as the number properly chargeable to the epidemic.

The total casualties in the American Expeditionary Forces have recently been unofficially estimated at 100,000. On the basis of the number thus far reported, it may be assumed that the deaths from all causes, including disease and accidents, or probably less than 45 per cent. and may not be more than 40 per cent. of the total casualties. On this assumption, the loss of life in the American Expeditionary Forces to date is about 40,000 or 45,000.

Thus, in forty-six American cities having a combined population of only a little more than one-fifth the total for the country, the mortality resulting from the influenza epidemic during nine weeks' period ended November 9 was nearly double that in the American Expeditionary Forces from the time the first contingent landed in France until the cessation of hostilities.

For the forty-six cities taken in a group, the epidemic reached its height during the two weeks ended October 26, for which period 40,782 deaths were reported—19,938 for the week ended October 19 and 20,844 for the following week. Since October 26, however, the decline has been pronounced. During the week ended November 2, 14,857 deaths occurred, and during the following week only 7,798. The only city in which the number of deaths reported for the week ended November 9 exceeded the number occurring during the previous week was Spokane, Washington.

In general, the epidemic traversed the country from east and west. In a number of Eastern cities—notably Boston, where the greatest mortality occurred during the week ended October 5—the largest numbers of deaths were reported for earlier periods than that which covered the height of the epidemic for the forty-six cities taken as a group. On the other hand, in New Haven, New York, Pittsburgh,

and Rochester the maximum mortality occurred somewhat later than in Eastern cities generally. In Baltimore, Buffalo and Philadelphia the two weeks' period ended October 26 showed the greatest number of deaths. For the entire nine weeks' period, the greatest mortality due to the epidemic, in proportion to population—7.4 per one thousand—occurred in Philadelphia; and the next greatest—6.7 per one thousand—was reported for Baltimore.

SOCIETY PROCEEDINGS

A regular meeting of the Scott County Medical Society was held Tuesday evening, December 3, 1918 at 8:00 o'clock p. m. at the Blackhawk Hotel, Davenport. A dinner was served at the Blackhawk Hotel at 6:00 o'clock p. m. sharp. During the year 1918 twelve new and reinstated members have been added to our membership.

A new candidate's name was presented at this meeting. Our service flag for the boys in service will soon be completed. Installation of officers for the year 1919 was held at this meeting.

Dr. O. A. Dahms read a paper on Goitre. Dr. T. D. Starbuck read a paper on Extra-Uterine Pregnancy.

Officers for the year 1919 are: Dr. R. P. Carney, president; Dr. T. D. Starbuck, vice-president; Dr. R. E. Jameson, secretary; Dr. S. G. Hand, treasurer; Dr. F. Neufeldt, censor.

Total honorary members, 3; total members in service, 23; total members in practice at this time, 415; total members removed from city, 2; total members deceased during the year 1918, 2. Honorary members—Rev. M. Hare, C. T. Kemmer, and Jenny McCowen.

Members in service are—Drs. Allen, Braunlich, Barton, Blything, Binford, Cantwell, Decker, Ficke, Foley, Harkness, Kulp, Littig, Lamb, McCarthy, Schroeder, Speers, Shafer, Middleton, Lambach, Bawden, Glynn, Stoecks and Faulk.

Members in practice in the city of Davenport and county of Scott—Drs. Allen, Braunlich, Bendixen, Burk, Barewald, Carney, Decker, Donahue, Dunn, Elmer, W. Matthey, H. Matthey, Goenne, Hageback, Hand, Jappe, Jameson, Haller, Kulp, Kingsburg, Neufeldt, Rendleman, Sullivan, Strobehen, Sala Schmidt, J. S. Weber, Lee Weber, Starbuck, Skelly, Tueffel, Taylor, Vollber, Dahms, Gouldner, Lando, Grossau, Bowman, Crone, Marble, Gillette, McCullough, Kuhl, and J. F. Kempker.

Members removed from city are—Drs. E. F. Hoover and Miller.

Members deceased during year 1918 are—Drs. Littig and Skinner.

We need new members; we need your help to secure new members.

We need clinical cases; we need your clinical cases.

We need more interest; we need your personal interest.

We need more interesting papers; we need your papers.

We need your dues; your dues for 1919 will be \$10. Pay all dues to Dr. S. G. Hands, treasurer of the Scott County Medical Society. His address is 605 Putnam bldg., Davenport, Iowa.

R. E. J., Sec'y.

The Jackson County Medical Society meeting was held Thursday, Sept. 12 at 2:00 p. m. at Maquoketa, Iowa. Officers elected were as follows: President, Dr. D. N. Loose; vice-president, Dr. E. L. Lampe; secretary, Dr. J. C. Bowen. Censors, Dr. L. B. Carson, Dr. D. N. Loose, Dr. A. B. Bowen.

The following papers were read:

Service in the Medical Reserve Corps, U. S. Army—Captain L. B. Carson.

The Volunteer Medical Service Corps—J. O. Ristine, Maquoketa.

The Organization of a Hospital—Miss Ruddy, R. N., Maquoketa.

Report of Three Interesting Cases—Dr. James R. Guthrie, Dubuque.

Control of Venereal Disease—Dr. F. V. Johnson, Maquoketa.

The meeting of the Southeastern Iowa Medical Society has been postponed indefinitely, owing to the Spanish influenza quarantine.

F. S. B.

Austin Flint-Cedar Valley Medical Society meeting was held Tuesday, November 12, at Algona. Officers elected were as follows: President, C. E. Dakin, Mason City; vice-president, Dr. O. M. Landon, New Hampton; secretary, W. E. Day, Clarks-ville; treasurer, Dr. J. G. Evans, New Hartford. Board of censors: Dr. T. U. McManus, Dr. N. Schilling, Dr. L. C. Kern.

The scientific program was as follows:

Pneumonia—Dr. Thos. A. Hobson, Parkersburg.

Typhoid Fever—Dr. C. C. Smith, Clarks-ville.

Some of the Uses of Radium in Dermatology—Dr. J. F. Auner, Des Moines.

Some Practical Points on Injuries to Joints—Dr. Chas. Ryan, Des Moines.

Trauma as a Factor in Malignant Diseases—Dr. George Kessel, Cresco.

The Grestest Food in the World—Milk—Dr. O. P. Thompson, Waterloo.

A Paper—Dr. Paul Gardner, New Hampton.

Influenza and Treatment—Capt. C. E. Hartman, Des Moines.

A Paper—Dr. N. Schilling, New Hampton.

Banquet program: Toastmaster—S. E. McMahon.

The Army Chaplain—Rev. W. J. Todd.

The Red Cross Nurse—Dr. J. F. Auner.

Keep the Home Fires Burning—L. J. Dickinson.

The Doctor in Court—Judge W. B. Quar-ton.

The Austin Flint-Cedar Valley Medical Society—"First in Peace, First in War"—Dr. W. A. Rohlf.

DEATHS

Dr. Arnold Robert Moon of Williamsburg died October 6, 1918 and Mrs. Arnold Robert Moon died October 7, of pneumonia, following influenza.

Dr. Moon was the son of Dr. A. C. and Emma Moon, born in Williamsburg, February 19, 1886. Graduated in College of Liberal Arts, State University 1908 and in medical department 1910, combined course. Graduate work Boston and in Vienna, returning to the United States in the summer of 1915. Married September 4, 1912 to Miss Jennie Rhodes of Estherville.

Thus were two promising lives ended in the beginning of their usefulness.

Dr. Charles Rochester Eastman was found drowned in the sea at Long Beach where he was resting after a period of strenuous work as a member of the war trade board in Washington.

Dr. Eastman was a naturalist of international reputation, a student of fish life, and had published upward of 100 scientific papers dealing with fossil fishes. From 1916 until he resigned to go into war work he was associate in palæontology in the American Museum of Natural History.

Formerly professor in the Carnegie University at Pittsburgh, he was for many years a member of the teaching staff of Harvard University. He was a gifted linguist, and in his war work he is said to have translated no less than ten languages. He was well versed in classical Greek, and was said to have known more of the writings of the naturalists of antiquity than any living scholar.

He was a member of scientific associations and paleographic research societies of New York, Maryland, Connecticut and New Jersey, and had traveled extensively. Recently he returned from a trip in South America, where he secured collections for the local Museum of Natural History.

Dr. Eastman was born in Cedar Rapids, in 1868. He was a graduate from Harvard University in 1890, from Johns Hopkins in 1892, and from Munich in 1894, receiving there his degree in medicine. He is survived by his widow, who is a daughter of Alvin Clark, the famous maker of telescopes, and by one son, who is in the aviation training school at Harvard.

Dr. R. W. Homan of Webster City, formerly a member of the faculty of the Homeopathic Department of Iowa State University, died suddenly at Webster City, October 31, 1918. Dr. Homan was forty-nine years of age.

Dr. M. B. Wyatt of Manning, died recently, Dr. Wyatt was a graduate of the Nebraska University College of Medicine, 1907.

Henry Joseph Roewe was born near Laurens, June 9, 1892, and died at the Michael Reese Hospital in Chicago, October 25, 1918. He graduated from the

Laurens High School in 1911 and took his B. S. degree at the State University in 1916 and his M.D. degree from Northwestern University in June this year. Since his graduation in medicine, and even before, he had been an interne in the Michael Reese Hospital in Chicago. Last December he enlisted in the U. S. Medical Reserve and was awaiting his call to regular service.

The Iowa Medical Journal of the current issue contains an unusually fine full page portrait of the late Dr. F. E. Whitley of this city. With the portrait is given a lengthy review of the physician's life and activities, which, while lived and begun in this city carried the influence of high ideals and thoughtful study into all channels of the state and national medical associations through the long years of his affiliation with them.

The honor thus paid to the memory of Dr. Whitley and through it to members of his family here is the greater, because of the infrequency that such acknowledgment is made by the writers on the Journal's editorial staff.—Webster City Times.

Word has been received in Sioux City of the death Sunday of Dr. H. N. Marvin at his home in Dover, Delaware.

Dr. Marvin came to Sioux City in 1873. He was one of the founders of the Woodbury County Homeopathic Society. He left here in January, 1907, and located in Dover, where he has made his home ever since. On March 4 of the same day his son Horace, mysteriously disappeared from his home and it was believed that he had been kidnapped. The child was found dead in a marsh two months afterward and it was the general belief that he had wandered away from home. However, the Doctor never was convinced that his son had not been kidnapped for ransom and that the kidnappers became frightened and left the body where it could be found.

Charles Pulford Forward, M.D., aged twenty-nine; Washington University Medical School, 1912; member of Iowa State and Dubuque County Medical Societies; a practitioner for six years at Dubuque; a capable young physician, a specialist in pediatrics; died at Finley Hospital, Dubuque, November 11, from broncho-pneumonia, following influenza.

Edgar L. Bay, M.D., aged forty-five; Marion-Sims College of Medicine, 1899; Fellow of the American Medical Association, member of the Iowa State and Wapello County Medical Societies, died at his home in Eddyville, October 31, from influenza.

William L. Creswell, M.D., aged forty; State University of Iowa Medical College, 1903; died in St. Vincent's Hospital, Sioux City, October 22 from pneumonia, following influenza.

John Frederick Brott, M.D., aged forty-one; Drake University Medical School, 1897; Fellow of the American Medical Association; member of Iowa

State and Lyon County Medical Societies, was found dead in bed at his home in Doon, from heart disease, October 30.

Dr. George Lacey received a telegram Monday morning stating that a son, who has been in the Navy for twelve years, is dead. No further information is given. The Doctor is under the impression that he had been recently given some clerical work in an office in Philadelphia but has no positive information in regard to it; he knows that his son made two trips to France at a comparatively recent date on a merchant vessel in charge of two gun crews, being a chief gunner's mate. He wore a medal for sharp shooting and rapid firing and one for services with the Red Cross at the island of Martinique at the time of the earthquake. He was on the battleship Connecticut, which was the flagship of the Atlantic fleet, at the time it made its trip around the world. Dr. Lacey has three other sons in the Navy one of them being an ensign, all having enlisted since the outbreak of the war.

Capt. Claude Melville Campbell, M. C., U. S. A., of Decorah, aged thirty-three; Northwestern University Medical School, 1910; Fellow of the American Medical Association; member of Iowa State and Winneshiek County Medical Societies; while on duty at Fort Riley, died at Glencoe, Minn., October 23 from pneumonia, following influenza.

BOOK REVIEWS

PROGRESSIVE MEDICINE

A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics, Materia Medicine and Diagnosis in the Jefferson Medical College, Philadelphia. Assisted by Leighton F. Appleman, M.D. Instructor in Therapeutics. Jefferson Medical College, Philadelphia. Per Annum, \$6.

This is No. 20, volume xxi of a valuable serial published by Lea and Febiger, New York. The first section of the work is a digest of the literature on Hernia by W. B. Coley of New York.

The question of hernia in relation to war is considered. The frequency of hernia among men otherwise fit for service is so great as to raise a serious question of man power but the reluctance of the government to force men to submit to operations has led to deferring any active measures as long as possible. Although every encouragement is offered to induce men to submit to operation voluntarily. Various methods of operation are reviewed. Trauma as a cause of hernia is considered in considerable detail especially in the light of experience growing out of workmen's compensation acts. The result is that many manufacturing companies and nearly all railway companies refuse to employ men with a hernia

or a tendency thereto. The reader will here find an excellent resume of the subject.

The second section is devoted to the surgery of the abdomen, exclusive of hernia. The questions involved in this review are fundamental and worthy of careful study. Military surgery of the abdomen comes in for consideration. The surgery of the stomach receives a rather exhaustive surgical survey.

The section on gynecology is prepared by Dr. John G. Clark of Philadelphia. A short review on malignant conditions of the uterus followed by non-malignant conditions of the uterus brings out recent observations published. Recent work on ovarian transplantation finds a place here. The vagina and the female urinary system are rather extensively reviewed, always subjects of interest.

The most important section is on Disorders of Nutrition and Metabolism by O. H. Perry Pepper. The subject is so exhaustively treated and covers so wide a field of knowledge that we are unable to do more than call attention to a digest of literature that may profitably be studied by the student interested in the wide field of metabolism.

The review of the literature on ophthalmology is prepared by Dr. Edward Jackson of Denver.

THE HODGEN WIRE CRADLE EXTENSION-SUSPENSION SPLINT

Frank G. Nifong, M.D., F.A.C.S., with an Introduction by Harvey G. Mudd, M.D., F.A.C.S., St. Louis, with 124 Illustrations. C. V. Mosby Company, 1918.

The first page presents a most excellent picture of John Thompson Hodgen whose memory is a tradition in St. Louis, and who was the author of one of the best splints ever introduced to the profession. The book is made up largely of considerations for the use of the splint and illustrations of indications and application. It was the good fortune of the writer to know Dr. Hodgen and was so impressed by his personality and the skill displayed by him in treating fractures of the femur that we have used the Hodgen splint more than forty years. The authors have introduced certain very important modifications of the original splint and have extended its usefulness. We must cordially recommend this book to the attention of the profession.

DISEASES OF THE MALE URETHRA

Irving S. Koll, M.D., Professor of Genito-Urinary Diseases. Past Graduate Medical School and Hospital, Chicago, Octavo of 151 Pages with 123 Illustrations, Several in Colors. W. B. Saunders Company, 1918, Philadelphia and London. Cloth, \$3.00.

The book before us is a convenient and useful study of the diseases of the male urethra, commencing with the most common form, gonorrhea and its complications. After considering questions of diagnosis, there will be found a detailed account of the treatment of the disease. Recently much attention

has been given to prophylaxis, this is particularly true in the army where it is possible to enforce an early attention to exposure and to the first signs of the disease. The author has no faith in medical or vaccine treatment, but believes that 60 per cent. can be cured in from five to ten days if seen within the first twenty-four hours and if vigorous and properly directed treatment is employed. He now turns to the remaining 40 per cent. The complications of gonorrheal urethritis are considered in a way to prevent serious damage to the parts. Many physicians, to whose attention this book is directed, do not seem to know how much can be done—and which is entirely ignored by the patient, who so often relies on drug store treatment—to prevent trouble or delayed cure. A chapter is devoted to stricture following gonorrheal urethritis. A chapter on non-gonorrheal urethritis and two chapters on sexual impotence and sterility.

THE ESSENTIALS OF MATERIA MEDICA AND THERAPEUTICS FOR NURSES

John Forte, M.D., Assistant Professor of Therapeutics and Materia Medica. Georgetown University School of Medicine; Instructor in Materia Medica and Therapeutics. Providence Hospital Training School for Nurses. Third Edition, Revised, Enlarged and Reset. J. B. Lippincott Company. Price \$1.75.

This book is prepared for the purpose of instructing nurses in training schools in the use of drugs and medicinal agents generally employed by physicians. In hospitals practice only a limited number of drugs are used. The author attempts to show why such remedies are employed, their action, therapeutic value, how administered, and dosage. Second part begins by considering definitions, weights and measures and dose administration. After which comes a classification according to their action in disease, and under these groups the particular individual drug. The arrangement of the book is logical and well adapted for the use of nurses in training and nurses in work, who need to refresh their knowledge from time to time of therapeutical agents.

ALCOHOL, HYGIENE AND LEGISLATION

Edward Huntington Williams, Formerly Associate Professor of Pathology, State University of Iowa. Associate Editor of the Encyclopedia Britannica. (Tenth Edition), Etc. The Goodhue Co., New York, 1915.

This interesting little volume of 136 pages considers the subject of alcohol from several points of view. Chapter one. The Problem of Inebriety, "Why do most men drink?" and proceeds to answer the question in various ways. After considering the influence of education and training, with an increasing quantity consumed, the placing alcoholic liquors beyond the reach of the young is the probable solution of the problem. This is considered in

the chapter on legislation and the author places himself with the increasing number who believe in general legislative prohibition, his argument is supported by the recent war experiences. The book is a scientific and logical argument against the use of alcohol except in the most restrictive way.

MEDICAL WAR MANUAL NO. 7

Military Surgery of the Zone of the Advance, by George de Tarnowsky, M.D., F.A.C.S., Major M. C., U. S. A., Illustrated. Published by Lea and Febiger, Philadelphia and New York, 1918.

Although the author carefully informs us that this is not a text-book on military surgery, it certainly could well be used as such, due not only to the broad way in which the field is covered, but also to the clear concise style and the impression produced upon the reader, that here is a summing up of the best practices of surgery as it has been handled at the front.

The opening chapter, general considerations, deals with those environmental factors which influence wound healing; namely soil-pollution, weather, and exhaustion, the types of missiles and their resultant wounds, and the time element, the interval between the receiving of the wound and its dressing.

The regimental first aid station, during action, mentions its relative location, position of the surgeon, his conduct and leadership, the quality of the work done, the advance with the regiment as new positions are taken and the moral value and increasing importance of this station.

The third chapter describes the French zone of the advance, naming and outlining the varying conditions and methods in four types of sectors, which differ from each other on account of differences in terrain.

In the next chapter the British methods are described, with the statement that comparison between British and French systems is not possible because of radical differences in topography of the land and in general conception of trench warfare. The trench-foot regulations of the British Army are quoted verbatim, showing the importance attached to knowledge of causation, pathology and treatment of this great cause of non-efficiency.

Chapter five takes up the bacteriology of war wounds, showing that this is essentially changed by the terrain involved in the fighting. Traumatic shock, hemorrhage, wounds of the soft tissues, and general treatment of wounds are the titles of succeeding chapters. Tetanus, gas bacillus gangrene, cranial injuries, wounds of the face and neck, of the thorax, of the abdomen, of the bladder and external genital spinal injuries and wounds of the peripheral nerves, are all discussed.

The war surgery of joints is covered by chapters on Gunshot and other wounds of joints, special treatment of joint wounds, after which the author deals with the treatment of compound fractures not involving joints.

Of special interest is the subject of the splints used in the advanced zone during transport, emphasis being laid on the importance of a correct understanding of, and strict adherence to, the mechanical and surgical principles involved in the application of splints, especially as the surgeon must constantly improvise, during emergencies splints from all sorts of material, which must meet the usual requirement and in addition those arising from the necessity for moving the wounded man, often hurriedly and to some distance.

Burns are discussed under the headings of etiology, pathology and treatment, both immediate, usually the paraffin type of dressing, and the subsequent, considering the questions of skin-grafting and prevention of contractures.

The part played by gas in this war is shown by the statement that the Army of one of our Allies suffered some 40,000 casualties from this cause. The subject therefore deserves the space devoted to it and also the very complete discussion of the different gases used, their action, the prognosis, prophylaxis and treatment.

Chapter xxvii on Roentgenology in War Surgery, gives the standard methods of localization of foreign bodies, as approved by the Surgeon General's office, U. S. Army, and after describing in detail the technic dwells at length on the relation between the roentgenologist and the surgeon, showing the joint responsibility in a work in which both are equally essential.

The volume closes with a resume of the Carrel-Dakin technic for the treatment of infected wounds, recalling that neither of these workers claim to have made a new discovery but that the systematization of known processes produced new results.

In the introduction, stress is laid upon the necessity for the surgeon to be more or less, preferably more, familiar with military matters, must alter his mental attitude as to what wounds should be first treated, from his old civilian rules, to those governed by the necessity for rendering the greatest number of fighting men fit for duty in as short a time as possible, and for evacuating to the rear quickly, all men not so fit.

Major de Tarnowsky urges the acquisition of the qualities of a good soldier—to forget self-interest in the working toward the common goal—victory, and the essential spirit of obedience, prompt and unhesitating, and, most important, loyalty.

The book is of the same size as the preceding numbers, well illustrated and well printed, and the publishers may be sure that the ease with which such a book is read will contribute much to the kindly feeling of the reader for the publishing house.—Capt. Harry R. Reynolds, M. C., U. S. A.

YEAST IN DEFICIENCY DISEASES

Interest in the use of yeast as a curative agent has been revived by the article of Hawk, Knowles, Reh-fuss, and Clarke (*Jour. A. M. A.* Vol. lxi, No. 15; Oct. 13, 1917, pp. 1243-1247. This article calls atten-

tion to the very valuable action of yeast (the authors used bakers' yeast) in various dermatoses, constipation, and miscellaneous conditions.

They did not include in the diseases in which they tried yeast certain conditions in which yeast has probably some value, and in one of which—beri-beri—it is well recognized as a curative agent. We refer to the so-called deficiency diseases. As much has been written recently concerning the etiology of these diseases especially as correlated with the ingestion or rather the non-ingestion of certain food-stuffs or groups of foodstuffs, it may be well if we spend a little time to delimit what is well established in the etiology of these conditions from what is still conjectural.

The subject of the vitamins is well-treated by Funk in his book "*Die Vitamine, etc.*," 1914, and in an exposition concerning the so-called vitamins, with especial reference to their chemical nature, etc., is to be found in *American Medicine*, Vol. xxii, No. 11 (complete series), November, 1916, pp. 751-756. It was Funk's thesis that deficiency of a so-called vitamin in the food gives rise on the one hand to beri-beri and deficiency of another vitamin gives rise to scurvy. He calls attention to certain relations between scurvy and pellagra. Pellagra was regarded by him as being due to the absence of vitamin in the cornmeal used by the victims of this disease. The tropical disease "sprue" he also regards as due to vitamin deficiency.

Funk points out that yeast is very rich in vitamin, which he attempted to extract from yeast by chemical processes, but which he was unable to obtain in pure form. Funk did obtain from rice polishings a crystalline base which would promptly cure fowls that had already developed polyneuritis (a condition corresponding with beri-beri in man). He coined the term "vitamin" for this substance. Ever since the term "vitamin" has been used to designate substances of as yet undetermined chemical composition ingested by man, as a rule in his foodstuffs, small quantities of which are necessary for the perfect maintenance of his health.

According to Vedder (*Jour. A. M. A.* Vol. lxvii, No. 21; Nov. 18, 1916, pp. 1494-1497), "These substances (the vitamins) display a remarkable dynamic isomerism which has a most profound influence on their antineuritic properties. The curative form of each compound readily undergoes at ordinary temperature a rearrangement of its atoms resulting in the formation of a physiologically inert substance. By the application of dry heat the non-curative form can be readily reconverted into the curative one. Although the synthetic substances in which the physiologically important isomerism was first discovered were hydroxypyridins, it now seems possible that the antineuritic properties are not peculiar to them but are inherent in the type of isomerism of which they are capable." Later unpublished work of Williams and Seidell has furnished further evidence that a similar isomerism exists in the vitamin of yeast, and is primarily responsible for the instability of

these compounds which has so far prevented their isolation.

Criticism has been directed against the use of the word "vitamin," especially because the termination "amin" indicates a definite chemical structure peculiar to a group of definite substances. As yet no definite chemical structure has been proved for the vitamins. According to Vedder (*loc cit*), this is merely a splitting of hairs: "The term vitamin is simply a convenient expression to use in place of the elaborate phrase 'accessory food substance,' and it will probably continue to be used because of its convenience." At all events, the fact that the term is now well recognized in medical literature is evidenced by its acceptance in the following works on dietetics and in numerous chemical and therapeutic articles: Tibbles (1914), Bayliss (1917), Hutchinson (1917), Kellogg and Taylor (1917), Carter, Howe and Mason (1917), Lusk (1918). McCollum recognizes only two so-called vitamins that thus far have been proved to be wanting in the so-called deficiency diseases of man—the fat-soluble A, the lack of which causes a variety of xerophthalmus, and the water-soluble B, the lack of which causes beri-beri.

The relationship of scurvy, pellagra, and beri-beri have been pointed out by Williams (*American Medicine, Complete Series, Vol. xxii, No. 11, November, 1916, pp. 756-762*). For instance, there is a condition known as ship beri-beri, not due to the eating of rice, but appearing in crews who have made long voyages and who have subsisted especially on biscuit, or wheaten bread, and canned meats. This condition was regarded by Funk (see his book on the vitamins) as closely related to scurvy. At all events it seems to be regarded by *Jour. A. M. A.* as beri-beri (editorial article, Vol. lxx, No. 14, April 6, 1918; p. 1001), where such a condition is mentioned as having existed in the Norwegian mercantile marine. It may be that this is at least one of the conditions mentioned by Kellogg and Taylor (the food problem, 1917, p. 197), as "nutritional diseases which appeared in one of the armies of the present war, due to diets limited to white crackers and canned meats," and which "were promptly cured by the administration of water-soluble vitamin in the shape of yeast." Kellogg and Taylor also consider the possibility that pellagra is due largely to the absence of water-soluble vitamin. This disease and its etiology have been carefully studied by both McCollum and by Goldberger, who contributed articles on the subject in the Sept. 21, 1918 number of the *Jour. A. M. A.* (Vol. lxxi, No. 12). These authors agree that the disease is primarily associated with the unsatisfactory character of three of the factors of the diet, a deficiency of "fat-soluble A," a faulty inorganic portion, and the relatively poor quality of the proteins—Goldberger would add to this combination the possibility of a low or inadequate supply of water-soluble vitamin.

In an article on infantile scurvy, Hess (*Jour. A. M. A. Vol. lxx, No. 12; Sept. 18, 1915; pp. 1002-1006*), points out that this disorder, adult scurvy, and beri-beri have many factors in common. Carter, Howe

and Mason (nutrition and clinical dietetics, 1917) do not seem to distinguish between scurvy and infantile scurvy. As is well known, infantile scurvy is often associated with signs of rickets.

Hess in his feeding experiments on infantile scurvy found that yeast exercised an important effect on the growth of children between one and one-half years and two years of age, as evidenced by decided gain in weight. Fischer (*Therap. Gazette*), Feb. 15, 1917; pp. 91-94 used, with good results, autolyzed yeast together with improved diet in cases of children whom he regarded as suffering from vitamin insufficiency.

UTILIZATION OF PLATINUM IN UNUSED INSTRUMENTS

From: Lieut. Colonel F. F. Simpson, M.C., N.A., chief of section of medical industry.

To: The doctors and dentists of the country.

1. In view of the limited supply of platinum in the country and of the urgent demand for war purposes, it is requested that every doctor and dentist in the country go carefully over his instruments and pick out every scrap of platinum that is not absolutely essential to his work. These scraps, however small and in whatever condition, should reach governmental sources without delay, through one of two channels:

(a) They can be given to proper accredited representatives of the Red Cross who will shortly make a canvass for that purpose.

(b) They may be sold to the government through any bank under the supervision of the Federal Reserve Board. Such banks will receive and pay current prices for platinum.

By giving this immediate attention you will definitely aid in the war program.

2. It is recognized that certain dental and surgical instruments requiring platinum are necessary, and from time to time platinum is released for that purpose. It is hoped, however, that every physician and every dentist will use substitutes for platinum for such purposes wherever possible.

3. You are warned against giving your scrap platinum to any one who calls at your office without full assurance that that individual is authorized to represent the Red Cross in the matter. Lieut. Col. F. F. Simpson, M.C., N.A., Chief of Section of Medical Industry.

BIRTHS

Lieut. and Mrs. James B. Knipe of Armstrong, November 14, a son. Lieut. Knipe is in the service, now stationed at U. S. General Hospital No. 9, Lakewood, N. J.

MARRIAGES

At Cedar Rapids, October 23, Dr. F. A. Hennessy of Calmar to Miss Margaret Edwards.



DATE DUE SLIP

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL LIBRARY

**THIS BOOK IS DUE ON THE LAST DATE
STAMPED BELOW**

2m-8,'21

9699

5099

Library of the
University of California Medical School and Hospitals

9699

